



Ronald C. Broxton State Coordinating Officer

Jon K. Huss Federal Coordinating Officer

## Joint Recovery Support Strategy

Interagency Recovery Coordination  
DR 4435 / 4451 MO  
February 2020



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## Executive Summary

Extensive flooding and rainfall beginning in March 2019 thru July 2019 resulted in disaster events being declared under two separate declarations. DR-4435 covers the period from March 11 thru April 16 and addressed straight-line winds and flooding; while DR-4451 covers the period April 29 thru July 5 and included tornadoes, straight-line winds, and flooding.

Issues identified in the Mission Scoping Assessment (MSA) are strategized in this document, the Recovery Support Strategy (RSS). Conducted by the respective Recovery Support Functions (RSF) Field Coordinators – both State and Federal - the MSA provides assessments of impacts from the disaster. The damage and impacts are discussed in terms of the State and local government's capacity to recover with minimal or no federal assistance, and further outlines federal resources that may be needed for recovery.

The Recovery Support Strategy (RSS) is an actionable document whose purpose is to set forth agreed-upon strategies, actions and tasks to help guide the state toward achieving its decided upon recovery goals. The RSS contains identified issues from the MSA, goals, strategies and actions, partner agencies, and suggested resources. The document further describes the approach and direction the Federal Disaster Recovery Coordinator (FDRC), RSF coordinating agencies and recovery partners will take to help address State and local recovery issues and challenges.

To assure the needs of the state were articulated and heard, the Interagency Recovery Coordination (IRC) staff supported the State Disaster Recovery Coordinator (SDRC) in convening the Missouri Whole Community Partners Recovery meetings. The purpose of the meetings was to identify impacts, and to determine any resulting issues that cut across all recovery support functions. Nine cross-cutting issue areas were identified and are denoted as: agriculture, business, health and well-being, recovery capacity, resilient infrastructure, tourism, transportation, unmet housing needs, and watershed management. The specific issues (22 total) identified in the MSA were correlated to the nine cross-cutting areas and are charted below.

### The MSA identified issues according to RSF areas are:

KEY: AG – agriculture; CPCB – community planning & capacity building; ECN – economics; HOU – housing; IS – infrastructure systems; NCR – natural & cultural resources
<b>AG: Issue A – Data and Reporting of Impacts</b>
<b>AG: Issue B – Disruption of Crop Production</b>
<b>AG: Issue C – Full Impact of Flood Cannot be Assessed Due to Crops/Land Still Under Water</b>
<b>AG: Issue D – Health and Well-being of Rural Communities</b>
<b>CPCB: Issue A – Limited Availability and access to Resources</b>
<b>CPCB: Issue B – Limited Pre-Disaster Recovery and Resilience Planning</b>
<b>CPCB: Issue C – Limited Recovery Planning Experience</b>
<b>CPCB: Issue D – Limited Understanding of Interdependencies Between Sectors</b>
<b>ECN: Issue A - Difficulty in Assessing Economic Losses and Impacts</b>
<b>ECN: Issue B – Disruption to Business and Loss of Revenue</b>
<b>ECN: Issue C – Workforce Displacement</b>
<b>ECN: Issue D – Workforce, Business, and Tourist Travel Disrupted</b>
<b>HOU: Issue A – Expand Regional Capacity and Funding for Housing Development</b>
<b>HOU: Issue B – Increased Mitigation Efforts to Prevent Population Loss</b>
<b>HOU: Issue C – Increased Need for Affordable, Accessible, Housing</b>
<b>HOU: Issue D – Increased Need for Sustainable/ Resilient Housing</b>
<b>IS: Issue A – Flood Protection Systems are Vulnerable</b>
<b>IS: Issue B – Need for Broader Water Management of Missouri Riverway</b>
<b>IS: Issue C – Unmitigated Infrastructure Impacts</b>
<b>NCR: Issue A – Erosion and Sediment Control; Riparian Restoration*</b>
<b>NCR: Issue B – Flood Impact on Wildlife Habitats*</b>
<b>NCR: Issue C – Source Water Quality*</b>

\*NCR identified other issues in the final RSS

### The cross-cutting issues as they relate to the 9 recovery areas are:

Cross-cutting areas	Agriculture	CPCB	Economics	Housing	Infrastructure	NCR
Agriculture/Agribusiness	A, B, C, D		C		A	B
Business	A, B, C	D	B, C, D	A, C	A, B	
Health & Well-Being	C	C		A, B, C		
Recovery Capacity	C, D	A, C, D	A	D		
Watershed Management	A, B	A, C, D			B, C	A, B, C
Unmet Housing Needs		A, C, D	D	A, B, C, D		
Transportation		C, D	B, D	A, C	A, B, C	
Tourism		D	C		A	B
Resilient Infrastructure	A, B	C, D	B	B, C	B, C	

The recovery support strategies and actions for the 22 identified issues are described in this document and in the Recovery Implementation Matrix (RIM) that is under construction as a guidance and progress tracking tool for all stakeholders and partners.

This document is respectfully submitted by Jessica Catron, State Disaster Recovery Coordinator, and Heriberto Martinez, Federal Disaster Recovery Coordinator.

### Background

Heavy snowfall in the northern plains during the winter of 2018-2019 brought more than two to five times the amount of snow that normally falls in the region. This created conditions for record long-term flooding along the Missouri and Mississippi rivers in March and April 2019. In mid-April, when temperatures rose and snow melt occurred, although there was some receding of the rivers, the combination of melting snowpack coupled with rainfall that was 200 – 300% above normal and the breaking of the Spencer Dam in Nebraska, set the stage for major river flooding into May.<sup>1</sup> The high crests and prolonged period of flooding caused significant strain on area levees resulting in inundated coastlines and farmlands.

By June, the Mississippi had crested at 30.15 feet, the second highest cresting in the State's history. In Canton, Missouri, the Missouri River crested at 27.11 feet, which was the third highest cresting record in history for that portion of the river. At that point in the disaster event, 382 roads in 56 counties were closed as a direct result of flooding. A request for major disaster declaration was submitted on June 24, by which time more than 1650 primary homes had been inspected via Preliminary Damage Assessments (PDAs), with 953 of those found to have been destroyed or to have sustained major damage. In addition, 125 of 251 businesses were also destroyed or incurred major damage. On July 9, President Trump granted a major disaster declaration for 20 counties affected by flooding, tornadoes, and severe storms. The extent of damage was significant, and by July 29 the State requested FEMA consider an additional 21 counties and provide Public Assistance (PA) to 68 counties. At the height of the weather events more than 470 roads and bridges were closed and multiple businesses were lost.

<sup>1</sup> [https://www.kmbc.com/article/farmland-remains-underwater-after-historic-flooding-along-missouri-river/29778821#\\_](https://www.kmbc.com/article/farmland-remains-underwater-after-historic-flooding-along-missouri-river/29778821#_); [https://www.climate.gov/news-features/event-tracker/river-flooding-inundates-northern-plains-spring-2019;\\_](https://www.climate.gov/news-features/event-tracker/river-flooding-inundates-northern-plains-spring-2019;_) [https://www.discovermagazine.com/environment/record-rain-is-drowning-fields-in-the-midwest-is-it-climate-change;\\_](https://www.discovermagazine.com/environment/record-rain-is-drowning-fields-in-the-midwest-is-it-climate-change;_) <http://floodlist.com/america/usa/storms-floods-south-midwest-may-2019; http://www.msn.com/en-us/weather/topstories/cities-with-the-most-rainfall-in-2019/ss-BBY0OK0>

The winds and flooding experienced were the latest in a series of disasters that have impacted the residents, businesses, and institutions in the State. Since 2015 Missouri has had four (including DR-4451 and DR 4435) presidentially declared disasters involving flooding: DR 4250, Dec. to Jan. 2015; DR 4317, April to May 2017. This shows that some of Missouri's counties are being continually inundated by flooding events, and these numbers do not include the multitude of undeclared high-water events these communities face. The state is witnessing areas wherein water impacts and damage are not fully remediated and progress toward recovery has not been fully achieved. These facts point to the need for coordinated and intensive recovery efforts by State and Federal partners.

## **Beginning the Recovery**

Although 20 counties were initially approved for and included in the DR-4451 disaster declaration, several amendments were submitted and approved, so that by August 4, 2019, DR-4451 a total of 78 counties were designated for FEMA program assistance: Public Assistance (PA) only – 52; Individual Assistance (IA only) – 10; both PA and IA – 16. As the inclement weather had been ongoing, overlap in impacts, damage, and the assessments of those, led to additional counties requesting addition to the PA program. September 30 FEMA approved the addition of 14 more counties and the city of St. Louis. This amendment to the declaration resulted in changes to the number of counties eligible for both PA and IA wherein that number rose from 16 to 22; while the number of those eligible for only PA increased from 52 to 61; and the number of counties for only IA decreased from 10 to 4 as several of the originally designated counties for IA were now eligible for both PA and IA.

To initiate the recovery process, an Advanced Evaluation Team (AET) was deployed to assess damage in each of the six-recovery support function (RSF) areas: Community Planning & Capacity Building (CPCB), Economics, Health & Social Services (HSS), Housing, Infrastructure Systems, and Natural & Cultural Resources (NCR). Working with the Missouri State Disaster Recovery Coordinator (SDRC), the AET recommended that Community Planning and Capacity Building (CPCB), Economic, Housing, Infrastructure, and Natural and Cultural Resources (NCR) be activated. Support for the agricultural sector of the state was requested, and an agricultural advisor (acting as an RSF) was also activated.

Recovery Support Functions worked to provide a structure to facilitate problem solving, improve access to resources, and foster coordination among state and federal agencies, non-governmental partners, and other stakeholders. FEMA provides long-term recovery leadership, and coordination working with Local Disaster Recovery Managers, the SDRC and the FDRC. Each RSF at the State and Federal levels has a designated coordinating agency, along with primary agencies and other supporting organizations. Work performed by each RSF is outlined in their mission statements below:

<b>Recovery Support Function</b>	<b>Mission</b>
<b>Community Planning and Capacity Building (CPCB)</b>	Support and build recovery capacities and community planning resources of local, State and tribal governments needed to effectively plan for, manage and implement disaster recovery activities in large, unique or catastrophic incidents.
<b>Economic Recovery</b>	Integrate the expertise of the federal government to help local, State, and tribal governments and the private sector to sustain and rebuild businesses and employment, and to develop economic opportunities that result in economically resilient communities after large-scale and catastrophic incidents.
<b>Housing Recovery</b>	Address pre- and post-disaster housing issues and coordinate and facilitate the delivery of federal resources and activities to assist local, state and tribal governments in the rehabilitation and reconstruction of destroyed and damaged housing, whenever feasible. Provide assistance in coordinating and facilitating other new accessible, permanent housing options.

<b>Infrastructure Systems Recovery</b>	Facilitate the integration of the capabilities of the federal government to support local, State and tribal governments and other infrastructure owners and operators in achieving recovery goals relating to the public engineering of the nation's infrastructure systems.
<b>Natural and Cultural Resources Recovery</b>	Protect natural and cultural resources and historic properties through appropriate planning, mitigation, response, and recovery actions to preserve, conserve, rehabilitate, and restore them consistent with post-disaster community priorities and best practices and in compliance with applicable environmental and historic preservation laws and executive orders.

A FDRC was appointed and deployed on September 5<sup>th</sup>. The FEMA staffed portion of the Interagency Recovery Coordination group was fully operational by September 25<sup>th</sup>. The designated RSF Field Coordinators and Agriculture Advisor were staffed and fully operational by October 15, 2019. As this disaster was the first time the State activated its RSF structure alongside federal partners, the SDRC, FDRC, and IRC group collaborated to establish an inclusive working schedule between State and Federal RSF Coordinators so as to share knowledge of the RSF structure, purpose, processes, and deliverables with the newly appointed State RSF coordinators.

### **About the Recovery Support Strategy (RSS)**

The five activated and deployed federal Recovery Support Function Field Coordinators (RSF FCs) and the Agriculture Advisor, conducted assessments of impacts and entered their findings and recommendations into the Mission Scoping Assessment (MSA). The primary purpose of the MSA was to assess impacts upon communities and ascertain if recovery needs would exceed state and/or local resources, capacity, and/or capabilities, and therefore, recovery efforts would benefit from federal resources and assistance. Findings from the MSA feed into the RSS for the development of goals, strategies and actions toward achieving recovery.

The MSA process was conducted in collaboration and coordination with State designated RSF Coordinators for each recovery support area, and the SDRC. It was important that the needs of the state be clearly articulated and that consensus on the issues and gaps be achieved. To this end, partners and stakeholders were included in the discussions via the Whole Community Partners Flood Recovery meetings hosted by the State and its federal FEMA partners. Consensus was also a critical factor because the State desired an RSS that contained strategies for recovery impacts it could address and with proper resources, could complete.

This approach was in contrast to the traditional Interagency Recovery Coordination (IRC) group mission which generally conducts both the MSA and RSS as federally produced deliverables, and then presents the RSS to the State as a menu of proposed items for recovery from which the state chooses those issues, strategies and goals for which it would seek resources. In the DR-4451 IRC recovery mission, integration of, and consensus between state and federal RSFs from the outset resulted in the State articulating its needs in the Advanced Evaluation, the MSA, and spelling out the direction its recovery will take in the RSS.

The RSS process evolved with the Whole Community Partner Flood Recovery meetings wherein State and Federal RSF Coordinators, Federal and State partners, private and non-profit stakeholders met to discuss identified impacts and resultant issues from the DR-4451 flooding event and cross over impacts from prior events still being addressed in recovery. The meetings were formulated at the request of the State and together with FEMA staff, guest lists and agendas were created. The meetings had break-out sessions for each recovery support area, and provided opportunities for networking, discussion, and strategizing.

A final Whole Community Partner Flood Recovery meeting will be held on February 24, 2020. The purpose of this meeting will be to determine the course of recovery implementation, discover and identify champions for projects, and identify possible resources.



## The National Disaster Recovery Framework

The National Disaster Recovery Framework (NDRF) is a guide to promote effective recovery, particularly for large-scale or catastrophic incidents. The NDRF provides direction to enable Federal agencies to organize and operate more effectively and to use existing resources to promote effective recovery and support states. Its structure is flexible and adaptable for disaster recovery managers who must

operate in a unified and collaborative manner and it focuses on how best to restore, redevelop and revitalize the health, social, economic, natural and environmental fabric of the community as well as build a more resilient nation.

The framework defines core recovery principles and the roles and responsibilities of recovery coordinators and stakeholders. Its structure facilitates communication and collaboration among all stakeholders and provides guidance for pre- and post-disaster recovery planning. The NDRF describes the overall process by which communities can capitalize on opportunities to rebuild stronger, safer and smarter.

The NDRF establishes Recovery Support Functions (RSFs) based on sector and core capability. Each RSF is responsible for coordinating federal actions in support of these core capabilities.

## Missouri Disaster Recovery Framework

The Missouri Disaster Recovery Framework is modeled after the NDRF, and incorporates proven recovery principles, aligns with the national coordination structure to better address gaps and needs, avoid duplication of efforts, and leverage resources during long-term recovery.

At the time of the 2019 disasters, (DR-4435 and DR-4451), the State's efforts were focused on refining the recovery support function annexes. The activation of the Interagency Recovery Coordination group provided the opportunity for the State to advance their sustainability and build internal capacity and capabilities to lead recovery in the future.

Integration of the State MDRF and the NDRF was accomplished through the integrated collaboration of the State and Federal RSF Coordinators, the entire IRC group, and support from the SDRC, FDRC, and Federal Disaster Coordinating Officer (FCO).

The process began with a formal Meet and Greet in October 2019, in which State and Federal RSF teams were created, consisting of State RSF Lead, Federal RSF Field Coordinators, and appointed Recovery Coordination Group (RCG) Liaison. The second phase of this joint planned approach was the establishment of weekly working sessions, in which the State and Federal RSF Teams intentionally come together to discuss where they are in the process, share ideas, synthesize information and vet them according to the State's identified priorities and goals. This phase of the process began in November and will continue throughout the Mission.

The third, and final Phase of the integrated process was the convening of three Whole Community Partner Flood Recovery meetings, in which a broader audience was assembled to hear from the RSF teams regarding findings, challenges, gaps, considerations and potential resources available for the State's recovery. The intent of these jointly held meetings was to ground truth initial findings with key stakeholders, and to receive their input and buy-in to ensure their support and affirmation at each stage of the recovery process. The Whole Community Partner Flood Recovery meetings mirrored the three traditional phases of an IRC Mission. They focused on the Mission Scoping Assessment (MSA), the Recovery Support Strategy (RSS) and implementation deliverables. The meetings were held on November 25 and January 6, with a final meeting scheduled for February 24<sup>th</sup>. Both state and federal leadership, have worked collaboratively to step the State RSFs through this process, with an eye toward the State gaining enough capacity to either conduct the process on their own or to lead it, bringing FEMA and other federal partners to the table as needed.



A cornerstone of effective coordination and collaboration is leveraging resources to maximize outcomes for the whole community's benefit. Plan integration supports risk reduction through various policy, planning, and development measures, before, during, and after a disaster or other event. DR-4435 and DR-4451 provided the opportunity for collaboration, engaging State and Federal RSF's in the disaster impact scoping assessment. These collaborative efforts provided a more complete picture, to enable better decision making toward a more effective recovery



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## Agriculture Recovery

Agriculture Partners	
Coordinating Agency	
United States Department of Agriculture (USDA)	
Primary Agencies	
Farm Services Agency (FSA)	
Natural Resources Conservation Service (NRCS)	
Food and Nutrition Service (FNS)	
Food Safety and Inspection Service (FSIS)	
Rural Development (RD)	
Supporting Agencies	
Missouri Department of Agriculture	
University of Missouri Extension Service	
Small Business Administration	
Missouri Department of Economic Development	
Local Agencies	
Chamber of Commerce	
Municipalities	
Missouri Economic Development Districts	

This section summarizes key findings impacting Agriculture and defines recovery issues, goals, objectives and strategies for the Agriculture Recovery Support Function (RSF). Agricultural staff gathered data on producers within the federally designated counties from a broad variety of media reports, federal, state and local government agencies.

Initial assessments from the State Department of Agriculture reported that Missouri experienced flooding to approximately 1.4 million acres of farmland, with many fields being unplantable for the entire 2019 planting season - spring and fall (Anderson, 2019). This information was validated later by USDA Risk Management Agency (RMA), when they reported 1.58 million acres of farmland were either unplantable or unable to be harvested during the 2019 spring and fall planting seasons. (Risk Management Agency, 2019).

While disruption of crop production, nitrogen fertilizer loss, poor weed control, and delayed crop planting and harvesting have been realized throughout all 83 disaster-declared counties, the highest impact was in the Northwest region of the state. This region alone had 74,000 acres inundated by floodwaters. The full economic impact of this region will take years to quantify, especially when approximately 30,000 acres remain underwater (Geist, 2019).

Too few Missouri producers have recovery plans or are familiar with what is needed to begin the recovery planning process. Many producers who suffered losses were eligible for both the U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) and Natural Resource Conservation Services (NRCS) emergency loans and grants. While this assistance helped, it will not be available this spring when their fields are either still under water, or not in a condition to be planted. This gap in knowledge needs to be bridged in order for Missouri producers to be successful throughout repetitive natural disasters.

## **Key Findings**

The Agriculture RSF coordinates with local, state, and federal agencies to provide funding and technical assistance to encourage sustained recovery of agricultural land, communities, housing, infrastructure, and business.

Collaboration between the state and federal Agriculture RSF coordinators and the State Disaster Recovery Coordinator identified three primary recovery issues affecting counties:

- Disruption of crop production
- Data and reporting of impacts
- Health and Well Being

Federal, State and local partners developed the following goals, objectives, strategies and actions to address these findings. The timeframes for actions are defined as follows:

### **Recovery Actions – Time Frame Definition**



**Up to 1 year**

**1 – 3 years**

**Longer than 3 years**

### **Recovery Issue: Disruption of crop production**

Disruption of crop production is a recovery issue that encompasses the development of strategies to improve the continuity of crop production, enhance sustainability of cropland that remained underwater for an extended amount of time, and minimize the direct physical damage to agriculture crops through improving drainage systems.

Decisions producers need to make to ensure sustainability of production before, during, and after a disaster can seem overwhelming. Identifying knowledge gaps in disaster preparedness and streamlining access to state, federal, and other agricultural resources can help producers better recover from this most recent disaster event and prepare them for future events.

**Goal A.1. Reduce disruption of crop production due to disaster-related events.**

**Objective A.1.1. Develop strategies to improve continuity of crop production before, during, and after a disaster-related event.**

## **Strategy**

**A.1.1.1.** Identify knowledge gaps in disaster preparedness.

**Action A.1.1.1.1.** Develop a checklist and conduct outreach that includes pre-disaster mitigation measures. For example:

- Storing hay bales and equipment in areas less likely to be flooded
- Installing ponds to capture stormwater
- Storage bins / building constructed out of floodplain or on raised base

**Coordinating Agency:** State Disaster Recovery Coordinator (SDRC).

**Supporting Partners:** MU Extension, Missouri Department of Agriculture (MDA), Natural Resources Conservation Services (NRCS), Farm Service Agency (FSA), Department of Natural Resources (DNR), Corn and Soybean Growers Associations, Missouri Farm Bureau (MFB).

**Strategy A.1.1.2.** Develop regional partnerships between key Ag partners, to act as a disaster "task force" for producers.

**Action A1.1.2.1.** Hold partnership meetings between key Ag partners to develop a "regional task force". This task force can include local, state, and federal government. It could also include local voluntary organizations.

**Coordinating Agency:** SDRC

**Supporting Partners:** Corn and Soybean Growers Association., State Emergency Management Agency (SEMA), NRCS, FSA, MFB, RPC

**Strategy A.1.1.3** Develop an enhanced flood monitoring system.

**Action A.1.1.3.1** The state works to initiate a flood monitoring system within the state and coordinates with other states to expand the flood monitoring system regionally.

**Coordinating Agency:** MDA, DNR, Governor's Flood Recovery Working Group (GFRAWG).

**Supporting Partners:** UM System, NRCS, US Corp of Engineers (USACE), DNR.

## **Objective A.1.2. Enhance producer knowledge of available disaster resources.**

Short-term

**Strategy A.1.2.1** Streamline access to state and/or federal assistance and eligibility determination.

**Action A.1.2.1.1** Establish a resource guide for state and federal flood recovery assistance.

**Coordinating Agency:** GFRAWG

**Supporting Partners:** SDRC

**Strategy A.1.2.2.** Determine if other non-disaster options are available such as eligibility of short-term financing, existing debt restructuring.

**Action A.1.2.2.1.** Establish a guide of state and federal non-disaster programs that may assist producers impacted.

**Coordinating Agency:** SDRC

**Supporting Partners:** MDA, USDA, DED

**Goal A.2. Sustainability of crop land remaining underwater for an extended amount of time**

**Objective A.2.1. Address problems and challenges that are preventing access to the impacted cropland.**

**Strategy A.2.1.1.** Compile listing of impacted cropland by region.

**Action A.2.1.1.1.** Monitor list and update when accessible.

**Coordinating Agency:** SEMA/OA-ITSD

**Supporting Partners:** MDA, FSA, NRCS

**Objective A.2.2. Determine severity of damage to soils that remained in a saturated / inundated condition for an extended amount of time.**

**Strategy A.2.2.1.** Assess biological health of the soil.

**Action A.2.2.1.1.** Create framework for restoring soil condition

**Coordinating Agency:** NRCS

**Supporting Partners:** MU Extension, Soil and Water Conservation Districts, DNR, MDA.

**Action A.2.2.1.2.** Outreach and educate producers to the long-term biological impact(s) to soils that remains in a saturated/flooded state. For example:

- Flooded soil may experience "post flood syndrome"
- Unplanted flooded area can be affected next season due to the absence of a root system (essential to maintaining the microbial community that contributes to nutrient cycling).

**Coordinating Agency:** NRCS, FSA

**Supporting Partners:** MU Extension, Soil and Water Conservation Districts, DNR, MDA.

**Strategy A.2.2.2.** Address the issue of land leveling and sand cleaning, ensure landowners and managers are aware of all the strategies they can employ to safely, efficiently, and cost-effectively dispose of, reuse or integrate sand deposits.

**Action A.2.2.2.1.** Identify areas still struggling with land leveling and sand cleaning issues and disseminate information for better understanding of:

- How much can be incorporated in soil using normal field operations.
- How to handle the sand and silt if unable to incorporate using normal field operations.
- Methods of rehabilitating fields with deep cuts and severe erosion.

**Coordinating Agency:** NRCS, FSA

**Supporting Partners:** MU Extension, Soil and Water Conservation Districts, DNR, MDA.

**Strategy A.2.2.3.** Disseminate cover crops as a method of improving soil health.

**Action A.2.2.3.1.** Educate on cover crop best practices that can support Missouri farmers in protecting their resources.

**Coordinating Agency:** NRCS, FSA

**Supporting Partners:** MU Extension, Soil and Water Conservation Districts, DNR, MDA.

**Goal A.3. Minimize direct physical damage to agriculture crops through improved drainage systems.**

**Objective A.3.1. Obtain a list of drainage systems.**

Long-term

**Strategy A.3.1.1.** Determine specific issues with these drainage systems.

**Action A.3.1.1.1.** Categorize damage to drainage systems.

**Coordinating Agency:** DNR

**Supporting Partners:** DNR, USDA, DED, SEMA.

**Action A.3.1.1.2.** Assist producers/landowners with debris removal, repairs and replacements of farm paths, culverts, bridges, ponds, etc. that are not covered under the federal Emergency Conservation Program.

**Coordinating Agency:** RPC/Local Mu.

**Supporting Partners:** DNR, DED, SEMA

**Strategy A.3.1.2.** Assess the need for implementing long-term drainage management practices that will minimize future impacts.

**Action A.3.2.1.1.** Educate on alternate methods of removing excess water from fields.

For example:

- Tile drains
- Grass waterways
- Ponds/Lakes

**Coordinating Agency:** USDA

**Supporting Partners:** DNR, DED, SEMA

### **Objective A.3.2. Engineer levee to tolerate topping without destructive breaching of levee.**

Long-term

**Strategy A.3.2.1.** Educate levee district/operator in current levee design technology.

**Action A.3.2.1.1.** Organize federal and Peer-to-Peer technical training.

**Coordinating Agency:** USACE

**Supporting Partners:** USDA, MU Ext., MDA

**Strategy A.3.2.2.** Temporarily reduce water flows from upstream areas to provide time to fix levee.

**Action A.3.2.2.1.** Work with federal and regional entities to improve flood control infrastructure and reaction to disaster events.

**Coordinating Agency:** MDA/DNR/GFRAWG

**Supporting Partners:** DNR, NRCS

## **Recovery Issue: Data and reporting of impacts**

Data and reporting of impacts as a recovery issue encompasses building a common metric for damage assessment and information flow. Comprehensive documentation of the collection process before, during and after the event is essential to an impactful recovery.

Quantitative data was difficult to obtain during the initial damage assessment; this fact hindered the incorporation of agriculture impacts into assessment findings. The consideration of impacts to agricultural land being calculated into the overall assessment of damage to the state is a must.

### **Goal B.1. Include agricultural land in determining disaster declarations.**

#### **Objective B.1.1. Build common metrics for agriculture and agricultural infrastructure damage assessment and information flow.**

## Long-Term

**Strategy B.1.1.1.** Identify pre-disaster data required in establishing a baseline for agriculture damage assessment.

**Action B.1.1.1.1.** Utilizing available resources, develop a set of relevant criteria to be used in developing a data collection matrix. For example:

- Missouri's agrarian structure
- Roads or bridges within the farm property
- Buildings and installations for the storage of equipment and or harvest products, irrigation or drainage systems
- Machinery, equipment and tools

**Coordinating Agency:** SDRC

**Supporting Partners:** MDA, USDA, DNR, MU Ext., Corn and Soybean Growers Ass., MFB, USACE

**Action B.1.1.1.2.** Use various methods to collect pre-disaster data. For example:

- Drones
- GIS
- Remote Sensing

**Coordinating Agency:** SDRC

**Supporting Partners:** MDA, USDA, DNR, MU Ext., Corn and Soybean Growers Ass., MFB, OA-ITSD

**Strategy B.1.1.2.** Identify post-disaster agricultural damage by surveying producers.

**Action B.1.1.2.1.** Develop survey for distribution to producers, to include pertinent post-disaster data collected. For example:

- How many acres are underwater?
- Damage to farm infrastructure?
- Damage to buildings and installations for the storage of harvested products, irrigation or drainage systems?
- Damage to machinery, equipment and tools?

**Coordinating Agency:** SDRC

**Supporting Partners:** MDA, USDA, DNR, MU Ext., Corn and Soybean Growers Ass., MFB, USACE

**Strategy B.1.1.3.** Identify post-disaster agricultural damage by surveying state and federal entities.

**Action B.1.1.3.1.** Have memorandums of understanding of what can be shared with key entities in advance of disasters.

**Coordinating Agency:** SDRC

**Supporting Partners:** MDA, USDA, DNR

## **Recovery Issue: Health and Well-being**

Health and well-being as a recovery issue encompasses making rural healthcare and mental health support accessible to farmers and their families. In recent years, many farmers, ranchers, and rural Missourians have become acutely aware of the fragility of Missouri's rural health care system, and how disruption can shake rural communities that are often forgotten in the national health care conversation. Advocating to connect rural communities with healthcare and mental healthcare services in disaster-ridden rural regions in the state is key in disaster recovery.

The upcoming winter and spring are predicted to bring more flooding, and thereby increase the likelihood of financial and emotional strain experienced by farmers and others in related agricultural industries. Because of this, producers must be able to make educated decisions regarding their financial resiliency during repetitive natural disasters.

### **Goal C.1. Make rural healthcare and mental health support accessible to farmers and their families, farm workers, and rural communities.**

#### **Objective C.1.1. Bridge gaps between the rural population and healthcare facilities and clinics.**

**Strategy C.1.1.1.** Assess areas throughout the state where gaps exist.

**Action C.1.1.1.1.** Utilizing available resources, inventory healthcare facilities and clinics.

**Coordinating Agency:** DMH, US DHHS

**Supporting Partners:** MU Ext., RPC

**Action C.1.1.1.2.** Survey rural residents in regard to what they feel are the barriers to them accessing healthcare.

**Coordinating Agency:** US DHHS

**Supporting Partners:** MU Extension, RPC, MDA, USDA/RD-Rural Utility Services (RUS)

**Action C.1.1.1.3.** Identify knowledge gaps and educate communities on when to seek healthcare.

**Coordinating Agency:** DHHS

**Supporting Agency:** MU Ext., RPC

**Strategy C.1.1.2.** Determine what is restricting residents from accessing healthcare.

**Action C.1.1.2.1** Evaluate restrictions, agencies/community partners to identify available funding and additional funding needed to overcome restrictions.

**Coordinating Agency:** US DHSS

**Supporting Partners:** MU Ext., RPC

**Action C.1.1.2.2.** Enact procedures to overcome restrictions.

**Coordinating Agency:** US DHHS

**Supporting Partners:** MU Ext., RPC

**Objective C.1.2.** Ensure citizens have an adequate supply of prescription and non-prescription medications during a disaster.

**Strategy C.1.2.1.** Educate individuals on having an adequate supply of prescription and non-prescription medications.

**Action C.1.2.1.1.** Work with local organizations to educate individuals on the need to maintain adequate supplies of medications.

**Coordinating Agency:** DHSS

**Supporting Partners:** MU Ext., RPC

**Action C.1.2.1.2.** During disasters, publish list of open pharmacies where medications can be filled.

**Coordinating Agency:** DHSS

**Supporting Partners:** MU Ext., RPC, SEMA

## **Goal C.2. Increase financial resiliency of farmers during repetitive disasters.**

**Objective C.2.1.** Ensure producers have access to affordable Federal Crop Insurance program.

**Strategy C.2.1.1.** Recognize the unique nature of flood events that may jeopardize crop production for multiple crop years.

**Action C.2.1.1.1.** Under Secretarial disaster declaration special justifications be given for crop insurance not limited to prevent plant and high-risk premiums.

**Coordinating Agency:** MDA/DNR - GFRAWG  
**Supporting Partners:** USDA-RMA, MDA

**Objective C.2.2. Producers are able to appropriately evaluate their level of risk management.**



**Strategy C.2.2.1.** Develop skills needed to assess all areas and levels of risk management.

**Action C.2.2.1.1.** In collaboration with both agricultural stakeholders and private sector, develop a learning plan that will develop skills needed to assess the level of risk management. For example:

- Good farming practices
- Financial training
- Effective record keeping practices

**Coordinating Agency:** MU Extension /USDA-RMA

**Supporting Partners:** Soil and Water Com/DNR, MDA

**Strategy C.2.2.2** Ensure awareness of programs designed as agricultural safety net programs.

**Action C.2.2.2.1.** Utilizing local resources and/or Farm Service Agency representatives, provide training to producers on what financial programs are available for use as a safety-net. For example:

- Agriculture Risk Coverage (ARC)
- Price Loss Coverage (PLC)
- Federal Crop Insurance

**Coordinating Agency:** USDA-FSA and RMA

**Supporting Partners:** MU Extension, MDA

**Strategy C.2.2.3.** Determine if other non-disaster options are available such as eligibility of short-term financing, existing debt restructuring.

**Action C.2.2.3.1.** Work with producers and community partners to develop business plans, projects, and other financial information to assist in obtaining alternative financing.

**Coordinating Agency:** MU Extension

**Supporting Partners:** MU Extension, USDA-FSA/RMA, Ag Lender Ass.

**Objective C.2.3. Farmers and producers are empowered and understand the full range of alternative/ supplemental employment that may support producers during and after disaster related events.**

Short-Term

**Strategy C.2.3.1.** Educate producers on availability of vocational training programs.

**Action C.2.3.1.1.** Create educational/training material for distribution by community workforce support networks.

**Coordinating Agency:** MU Extension

**Supporting Partners:** MU Extension, USDA-FSA/RMA, Ag Lender Ass.

**Strategy C.2.3.2.** Expand knowledge of alternative methods of supplementation of income.

**Action C.2.3.2.1.** Identify and utilize workshops, webinars, direct mail, and other tasks to inform producers about program/service resources that could result in a supplementation of income.

**Coordinating Agency:** MU Extension

**Supporting Partners:** MU Extension, USDA-FSA/RMA, Ag Lender Ass.

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COMMUNITY  
PLANNING AND  
CAPACITY BUILDING

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## **Community Planning and Capacity Building**

This section summarizes key findings impacting Community Planning and Capacity Building and defines recovery issues, goals, objectives, and strategies for the Community Planning and Capacity Building (CPCB) Recovery Support Function (RSF).

CPCB Partners
<b>Coordinating Agency</b>
<b>FEMA/U.S. Dept. of Homeland Security (DHS)</b>
<b>Primary Agencies</b>
<b>FEMA/DHS</b>
<b>U.S. Dept. of Health and Human Services (HHS)</b>
<b>Missouri Department of Economic Development</b>
<b>Missouri Department of Public Safety</b>
<b>State Emergency Management Agency</b>
<b>Supporting Agencies</b>
<b>Corporation for National and Community Service (CNCS)</b>
<b>U.S. Dept. of Homeland Security (DHS)</b>
<b>U.S. Dept. of Commerce (DOC)</b>
<b>U.S. Dept. of the Interior (DOI)</b>
<b>U.S. Dept. of Transportation (DOT)</b>
<b>U.S. Environmental Protection Agency (EPA)</b>
<b>U.S. Dept. of Housing and Urban Development (HUD)</b>
<b>Small Business Administration (SBA)</b>
<b>U.S. Dept. of Agriculture (USDA)</b>
<b>Missouri Department of Elementary and Secondary Education</b>
<b>Missouri Department of Mental Health</b>
<b>Missouri Department of Health and Senior Services</b>
<b>Missouri Department of Higher Education and Workforce Development</b>
<b>Missouri Department of Commerce and Insurance</b>
<b>Missouri Voluntary Organization Active in Disaster</b>
<b>Governor's Partnership</b>

*CPCB Partners Source: FEMA*

The mission of the federal CPCB RSF is to support and build the recovery capacities and community planning resources of local, state, territorial, and tribal governments needed to effectively plan for, manage and implement disaster recovery activities in large, unique, or catastrophic incidents. CPCB achieves this mission through the coordination of CPCB partner resources and expertise to build recovery

capacities and inclusive community planning efforts.

Disasters diminish governing and organizational capacity of communities as they face large and complex challenges. From administrative, human resources, and fiscal perspectives, disasters create extreme stress for municipal officials and staff. The 2019 Missouri storms and flooding severely impacted 87 socioeconomically diverse counties with a rural residential population and an agrarian economy, as well as the State's most populous regions.

The flooding, tornadoes, and storms of 2019 leave complex problems in infrastructure, housing, commerce, community resources, and the natural environment to be solved. Tax revenues are often negatively impacted due to the loss of homes, residents and businesses. Loss of tax revenue impacts all government areas and affects staffing capabilities, provision of municipal services, and the ability to finance recovery initiatives.

Local capacity to plan, finance, and manage recovery activities varies; some counties and communities will require minimal outside support while others will require significant assistance. Regional and state planning and coordination entities will also be strained as lower capacity communities rely on them for support even more heavily than during steady-state periods, and thus will also require additional assistance.

## **Key Findings**

The CPCB RSF supports the development of local capacity, capabilities, and community planning resources by collaborating with a broad range of recovery partners.

The federal CPCB RSF worked closely with the State Disaster Recovery Coordinator and the state's Community RSF to identify three primary recovery issues affecting counties and communities:

- A. **Limited State, Regional, and Local Recovery Management Capability, Capacity, and Resources:** The disaster revealed that the state and its impacted communities have limited capability and capacity to manage recovery, including: overwhelmed general staff, often inexperienced elected officials with limited institutional knowledge due to term limits, and voluntary position turnover, limited planning and community development staff, mental health concerns that affect government staff well-being and functional capacity, and limited availability and access to resources.
- B. **Resilient Recovery Planning Challenges:** The state and its impacted communities face resilient recovery planning challenges due to limited expertise and experience regarding the interdependencies between sectors (need for cross-sector recovery coordination), infrequent recovery planning experience, and a need for more integrated planning efforts and more inclusive plans.
- C. **Limited Pre-Disaster Recovery and Resilience Planning:** Limited and untested pre-disaster recovery and resiliency planning has slowed the speed of recovery due to limited familiarity and experience, does not include any statewide adopted standards by which to measure success of efforts to increase resilience, does not yet fully support the integration of resilience and mitigation into steady-state development strategies, and provides few opportunities for educating and

incentivizing communities to implement resilient recovery practices (such as National Flood Insurance Program participation for instance).

Federal, State and local partners developed the following goals, objectives, strategies, and actions to address these findings. The timeframes for actions are defined as follows:

### **Recovery Actions – Time Frame Definition**



**Up to 1 year**



**1 – 3 years**



**Longer than 3 years**

## **Recovery Issue A: Limited State, Regional, and Local Recovery Management Capability, Capacity, and Resources**

Recovering from the flooding and storms of 2019 will necessitate a broader range of skills and capabilities than required by day-to-day governing, including a greater understanding of many interdependent issues, ability to handle an increased workload, technical expertise in various sectors, and the ability to track and manage the various deadlines, compliance requirements, etc. Ongoing analysis of financial data from the Missouri State Auditor indicates damage from the disaster likely exceed the available cash flow and reserves of many of the communities, requiring the need to potentially borrow or issue bonds or acquire grants to complete recovery projects in a timely manner.

Discussions with community partners identified that announcements regarding opportunities to meet with federal agencies or apply for funding are not always coordinated, thus some community agencies and personnel have not yet been able to access available opportunities. Even with an influx of philanthropic resources post-disaster, access to these resources can be competitive and smaller communities face hurdles in securing a portion of these resources. Additionally, Community Conditions Assessment analysis and discussions with state and local partners indicated that approximately 42% of impacted communities have fewer than five full-time professional staff and many communities operate with entirely volunteer governments. When these volunteers and limited staff experience personal disaster impacts, their mental and physical health and their available time are likely to be diminished, which can have broad impacts on the ability of their community to recover.

<b>Goal A.1. Impacted communities and regional entities have the resources they need to plan, execute, and manage long-term recovery actions</b>
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**Objective A.1.1. Ensure the impacted communities and regional entities gain sufficient personnel and resources to plan, execute, and manage their own long-term recovery actions and to coordinate efforts with, or to offer, or receive peer-to-peer assistance.**

Short-term

**Strategy A.1.1.1.** Develop regional organizational structures that allow mentoring of lower-capacity communities by higher-capacity communities. Share best practices in disaster recovery planning and management of resources among one another at a regional level.

**Action A.1.1.1.1.** For each Recovery Region, create an inventory of current and ongoing recovery efforts and issues shared among regional groups and disseminate information to all recovery partners to assist in coordinating projects and preventing duplication of efforts.

**Coordinating Agencies:** SDRC

**Supporting Agencies:** U. S. Dept of Economic Development Agency, Missouri Municipal League (MML), RPC'S, MACOG

**Strategy A.1.1.2.** Support communities to streamline and/or modify environmental review, building code inspections and enforcement, and permitting processes to expedite and encourage mitigation and resilient rebuilding projects in impacted communities, to minimize the immediate and long-term impacts of the disaster

**Action A.1.1.2.1.** Coordinate between state and federal agencies to consider innovative possibilities to allow rebuilding to take place more quickly and efficiently, while still giving due consideration to mitigation, resiliency, and environmental concerns. Involve VOAD partners in discussions to ensure goals are aligned.

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U. S. Dept of Economic Development Agency, MML, RPC'S, MACOG

**Strategy A.1.1.3.** Plan, coordinate, and execute an annual Statewide Community Recovery and Resiliency Symposium to network and learn about relevant opportunities for state, regional, and local officials to collaborate, and to share best practices for resilient recovery and mitigation planning among community partners.

**Action A. A.1.1.3.1.** Gather contacts and partners from the recovery and mitigation planning and economic development sectors from within the state and elsewhere interested in participating and attending the summit

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agency:** U. S. Dept of Economic Development Agency, MML, RPC'S, MACOG

**Action A.1.1.3.2.** Locate a central location in the state to host a symposium focused on pre-disaster recovery planning

**Coordinating Agencies:** SEMA

**Supporting Agencies:** FEMA, U. S. Dept. of Commerce Economic Development Agency, MML, RPC'S, MACOG

**Action A.1.1.3.3.** Include in the symposium an option for breakout sessions by region to discuss region-specific recovery issues and strategies

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U.S. Dept. of Commerce Economic Development Agency, MML, RPC's, MACOG

**Action A.1.1.3.4.** Host symposium annually to focus on ongoing resiliency, recovery, and mitigation planning, coordination, and sharing of state mitigation and resiliency vision and priorities, lessons learned, and best practices

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U.S. Dept. of Commerce Economic Development Agency, MML, RPC's, MACOG

**Strategy A.1.1.4.** Identify, coordinate, and deliver "shovel-ready" technical assistance, training, and applicable resources that can quickly enhance regional and local capabilities to manage immediate and long-term recovery.

**Action A.1.1.4.1.** In coordination with FEMA CPCB HQ, deliver "Just-in-Time Recovery Management Training" to RPCs, other regional entities, and communities in need of recovery management training as available/possible (likely not available until late 2020 or early 2021)

**Coordinating Agencies:** FEMA, SEMA

**Supporting Agencies:** U.S. Dept. of Commerce Economic Development Agency, MML, RPC's, MACOG

**Action A.1.1.4.2.** Offer CPCB training "Implementing and Managing Long-Term Recovery: A Training for Local Governments" to interested higher impact, lower capacity communities, either using CPCB HQ staff, or previously trained presenters in Missouri.

**Coordinating Agencies:** FEMA, SEMA

**Supporting Agencies:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce Economic Development Agency, MML, RPC'S, MACOG

**Action A.1.1.4.3.** Coordinate with federal, state, and NGO partners to identify additional quick-deploy trainings and deliver them to municipalities or organizations in the greatest need of immediate recovery planning and management support.

**Coordinating Agencies:** FEMA, SEMA

**Supporting Agencies:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce Economic Development Agency, MML, RPC'S, MACOG

**Action A.1.1.4.4.** Identify already scheduled relevant trainings within the state or adjacent states and ensure municipalities and organizations in need of those trainings are

aware of them and have the resources needed to be able to attend.

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce Economic Development Agency, MML, RPC'S, MACOG, U.S. EPA

**Goal A.2. Community and regional general government, community services, and planning and development staff have their mental and physical health needs met and can perform their duties at full capacity.**

**Objective A.2.1. Ensure mental health programs are available to government employees, survivors and volunteers in disaster-affected areas, as well as their families. This should be accomplished in coordination with measures outlined in the Ag sections of this RSS, with participation of SAMHSA and HHS assets.**

Even if a county has adequate staff, workers may lack the requisite knowledge, skills and abilities to manage local recovery efforts. The largest Missouri disaster of comparable scale to the 2019 flooding was the 1993 floods. Since that time, many communities have not retained the institutional knowledge, skills, and abilities to manage recovery efforts. State and local partners have cited high turnover rates in local government as the primary reason for this, especially high turnover of elected positions. Institutional knowledge has also been especially difficult to retain in many smaller communities which are led and managed entirely by volunteers who may not be able to maintain consistent participation in governing activities, particularly when facing personal recovery concerns post-disaster.

Staff and volunteers responsible for local leadership roles in disaster-impacted communities must gain expertise in administration, revenue and financial modeling, project management, grant writing/management, recovery and land use planning, zoning/permitting/inspections, floodplain management, fundraising, and sustainable and resilient design and rebuilding strategies. A key component of accomplishing this will be to enable higher capacity communities to share knowledge and resources with lower capacity communities via coordinated regional peer-to-peer networking.

**Strategy A.2.1.1.** Identify which mental health programs focus on local government employees, community organization volunteers, and their families in disaster-impacted areas, and ensure they have enough resources and potential clients have access to them

**Action A.2.1.1.1.** Connect local employees, community organization volunteers, and their families to mental health programs, especially those focused on post-disaster treatment (like the Crisis Counseling Program). Ensure existing mental health programs have additional capacity and funding resources, if needed.

**Coordinating Agencies:** DMH

**Supporting Agencies:** U.S. Dept. of Homeland Security, U. S. Dept.

of Commerce Economic Development Agency, MML, RPC'S,  
MACOG, SEMA, FEMA

**Objective A.2.2. Support existing targeted mental health programs to increase their capacity to assist entire communities in their mental health recovery.**

Short-term

**Strategy A.2.2.1** Identify mental health programs in the state which already effectively provide services to specific targeted populations, and assist them in expanding their scope to reach beyond a specific population and reach the whole community, to include municipal employees, community volunteers, their families, and others

**Coordinating Agency:** DMH

**Supporting Partners:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept. of Health and Human Services, and U. S. Dept. of Agriculture

**Action A.2.2.1.1.** Continue and build capacity of existing outreach efforts throughout impacted area to increase awareness of availability of mental health programs and resources, coordinated by DMH and the CCP. Reach out with door-to-door canvasses in impacted neighborhoods, and by connecting with schools.

**Coordinating Agencies:** DMH

**Supporting Agencies:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce Economic Development Agency, MML, RPC'S, MACOG

**Objective A.2.3. Ensure support structures for community health providers and programs are reviewed and put in place as necessary to ensure provide continuity of critical health and social services post-disaster.**

Short-term

**Strategy A.2.3.1.** Address “health deserts” (Tele-med/broadband needs)

Rural Missouri = healthcare professional shortage area, also a need for healthcare COOP, regular ongoing losses of rural hospitals and clinics exacerbated by losses from disasters

**Action A.2.3.1.1.** Work with providers to improve connectivity and expand telemedicine availability.

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce Economic Development Agency, MML, RPC'S, MACOG, and U.S. Dept. of Agriculture

**Action A.2.3.1.2** Engage the Missouri Department of Health and Senior Services to encourage the development of healthcare COOP plans.

**Coordinating Agencies:** DHSS, SEMA, PHEP

**Supporting Agencies:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept of Health and Human Services, and U.S. Dept. of Agriculture

**Strategy A.2.3.2.** Build recovery capacity across impacted education systems

**Action A.2.3.2.1.** Facilitate relationship development between impacted school leaders and school leaders from across the state and country with previous disaster experience to share lessons learned, to provide technical expertise, and to support the individual well-being of school leaders throughout the long-term recovery effort.

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U.S. Dept. of Homeland Security, U. S. Dept of Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept of Health and Human Services, and U.S. Dept. of Agriculture

**Strategy A.2.3.3.** Address interruption of paratransit services post disaster

**Action A.2.3.3.1.** Engage in planning with the state's access and functional needs committee and paratransit providers to plan for, and mitigate against, disaster disruption

**Coordinating Agency:** DMH

**Supporting Partners:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce -Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept. of Health and Human Services, and U. S. Dept. of Agriculture

**Strategy A.2.3.4.** *Final language yet to be determined by state*

**Action A.2.3.4.1.** Assist municipalities in identifying/acquiring the services of a fiscal agent to manage donated funds and reduce restrictions on their use and distribution

**Coordinating Agency:** DMH

**Supporting Partners:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce -Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept. of Health and Human Services, and U. S. Dept. of Agriculture

**Action A.2.3.4.2.** Help communities relieve donor fatigue by assisting them in identifying major donors, especially those that usually are not disaster focused, and increase relationships with / solicit funds from other foundations and build private sector partnerships, particularly to offer donor-matching incentives, etc.

**Coordinating Agency:** SEMA, FEMA

**Supporting Partners:** U.S. Dept. of Homeland Security, U. S. Dept. of Commerce -Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept. of Health and Human Services, and U. S. Dept. of Agriculture

## **Recovery Issue B: Resilient Recovery Planning Challenges**

Missouri's smaller, more rural communities have limited-to-no planning or community development staff and may have little experience developing long-term plans. Many communities rely on Regional Planning Commissions (RPCs) to develop and maintain their hazard mitigation and other plans. With an increased need for planning post-disaster, RPCs are likely to be overwhelmed and not have the capacity to assist their members as they would in normal circumstances. The state of Missouri operates as a Home-Rule state and therefore has not implemented any state-wide building or zoning code requirements.

Approximately 57% of impacted communities analyzed in the CCA process have no known active codes or planning documents. Implementation of plans that do exist or may be created may prove even more challenging, as it requires experience managing multiple projects with funders and diverse stakeholders. The task of undertaking an inclusive and holistic long-term recovery planning process (that incorporates risk assessment, mitigation, and resilience concepts) may present challenges to communities, especially those with little capability, capacity, and experience.

**Goal B.1. Encourage communities to develop and implement comprehensive long- term whole community recovery plans at multiple levels. This will require development of expertise, knowledge, understanding, personnel, and capability.**

**Objective B.1.1. Missouri's most impacted communities create specific long-term individual post-disaster community recovery plans. Communities can accomplish this by building resilience networks, integrating plans, and providing opportunities for peer- to-peer learning and support.**

Short-term

**Strategy B.1.1.1.** Identify, develop, and coordinate technical assistance, training, and applicable resources to assist the communities in creating a pre-disaster plan

**Action B.1.1.1.1.** Apply for and activate an American Planning Association (APA) Community Planning Assistance Team (CPAT) to help identified communities with the greatest needs to create community-specific long-term recovery and resilience plans as part of potential APA disaster CPAT pilot program

**Coordinating Agency:** SEMA, FEMA

**Supporting Partners:** American Planning Association, U.S. Dept. of Homeland Security, U. S. Dept. of Commerce -Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept. of Health and Human Services, and U. S. Dept. of Agriculture.

**Action B.1.1.1.2.** Identify and coordinate additional recovery planning assistance through regional entities, national organizations, universities or other partners to develop long-term community recovery and resilience plans for specific impacted communities as requested

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U. S. Environmental Protection Agency,

American Planning Association, U.S. Dept. of Homeland Security,  
U. S. Dept of Economic Development Agency, MML, RPC'S, MACOG, U.S.  
Dept of Health and Human Services, and U S Dept of Agriculture

**Goal B.2. Missouri and its communities increase resiliency and recovery capacity through enhanced interagency and inter- and intra-regional planning coordination and collaboration.**

**Objective B.2.1. Evaluate statewide and individual impacted community existing development and floodplain ordinances, statutes, regulations, etc. Comprehensive and hazard mitigation plans should also be evaluated or updated. If codes, ordinances, or plans are outdated or non-existent, new ones should be created, incorporating more integrated whole community planning.**

Intermediate

**Strategy B.2.1.1.** Provide resources, educational outreach, and workshops to jurisdictions and municipalities on how to plan for resilience (incorporate resiliency factors into their rebuilding efforts, plans for future projects such as transportation infrastructure, parks, etc.)

**Action B.2.1.1.1.** Identify and coordinate relevant agencies, organizations, and other stakeholders to be included in the planning process for specific plans to ensure cross-sector coordination

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** American Planning Association, U.S. Dept. of Homeland Security, U. S. Dept of Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept of Health and Human Services, and U S Dept of Agriculture

**Action B.2.1.1.2.** Coordinate with state/FEMA Hazard Mitigation and PA to ensure communities understand how to access funds to incorporate hazard mitigation into their rebuilding projects and have submitted projects for consideration for funding

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** Public Assistance, Hazard Mitigation, U. S. Dept of Homeland Security, American Planning Association, U.S. Dept. of Homeland Security, U. S. Dept of Economic Development Agency, MML, RPC'S, MACOG, U. S. Dept of Health and Human Services, and U S Dept of Agriculture

**Action B.2.1.1.3.** Identify and deliver training on 'whole community' resilient and inclusive planning to local officials and/or regional disaster recovery managers responsible for developing and implementing long-term recovery and other plans

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** American Planning Association, U.S. Dept. of Homeland Security, U. S. Dept of Economic Development Agency, MML, RPC'S,

MACOG, U. S. Dept of Health and Human Services, and U S Dept of Agriculture.

**Objective B.2.2. Develop coordinated regional-scale post-disaster recovery and resiliency plans, incorporating and integrating with state and local hazard mitigation plan objectives and projects by end of 2020.**

Short-term

**Strategy B.2.2.1. Final language yet to be determined by state**

**Action B.2.2.1.1.** Convene identified community leaders within a region to coordinate regional recovery planning and projects on a regular basis

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** Corporation for National and Community Service, U.S. Dept. of Homeland Security, and American Planning Association

**Action B.2.2.1.2.** Facilitate and coordinate the participation of federal and state agencies in the regional recovery and resiliency planning process

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** Corporation for National and Community Service, U.S. Dept. of Homeland Security, and American Planning Association

**Action B.2.2.1.3.** Federal and state agencies educate regional leaders on government disaster concept of operations, explaining why they make the decisions they make in disaster situations

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** Corporation for National and Community Service, U.S. Dept. of Homeland Security, and American Planning Association

**Action B.2.2.1.4.** Develop feedback from regional community leaders into a regional recovery and resiliency plan and coordination structure and ensure buy-in from all participating communities.

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** Corporation for National and Community Service, U.S. Dept. of Homeland Security, and American Planning Association

**Objective B.2.3. Encourage all jurisdictions to be represented by long-term resiliency focused COADs, LTRCs and case management capabilities.**

Intermediate

**Strategy B.2.3.1** Provide support to communities as they develop COADs, LTRCs and case management capacity. Involve COAD Committee members from the Governor's Partnership and Missouri VOAD in supporting development and continuation of these organizations.

**Action B.2.3.1.1.** Assist COADs in evolving into local whole community recovery and

resiliency planning coalitions involving various local government agencies, NGOs, private sector groups and businesses (i.e. economic recovery, housing) that serve as local whole community resilience planning networks during blue skies.

**Coordinating Agencies:** COAD Committee of the Partnership

**Supporting Partners:** Corporation for National and Community Service, U.S. Dept. of Homeland Security, and American Planning Association

## Recovery Issue C: Limited Pre-Disaster Recovery and Resilience Planning

Largely due to the need for enhanced capacity, communities need technical assistance to conduct and complete pre-disaster recovery and resilience planning. The State's last major disaster was only two years ago in 2017, but the devastation and disaster impacts did not rise to the same level as this disaster. At that time, efforts began to develop a state recovery framework. The Missouri Disaster Recovery Framework (MDRF) has since been established in alignment with the National Disaster Recovery Framework (NDRF), but this disaster is the first time the Recovery Support Functions structure has stood up. Thus, the State and its local communities are very new to the complexity of planning and managing comprehensive, long-term disaster recovery and the requisite need to quickly make strategy and planning decisions that impact all constituents. Additional concerns for CPCB within this issue include low participation in the National Flood Insurance Program (NFIP) and the Community Rating System (CRS) and a need for greater incorporation of resilience-building measures into community plans and actions of all types.

**Goal C.1. Missouri and its communities have pre-disaster recovery plans and coordinating structures that provide long-term recovery guidance and promote ongoing resilience and effective intergovernmental coordination and collaboration.**

### Objective C.1.1. *Final language yet to be determined by state*

Intermediate

**Strategy C.1.1.1.** Identify, develop, and coordinate technical assistance, training, and applicable resources to assist the State (Long-Term Recovery Planner position, if created) in creating a Missouri pre-disaster recovery plan

**Action C.1.1.1.1.** Deliver L-0209 State Recovery Planning and Coordination course

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Action C.1.1.1.2.** Attend and facilitate pre-disaster recovery coordination planning meetings

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** Corporation for National and Community

Service, U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Action C.1.1.1.3.** Review and provide considerations/feedback on draft pre-disaster recovery coordination plans/structures as requested

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Strategy C.1.1.2.** Coordinate between state and federal agencies to consider innovative possibilities to allow rebuilding to take place more quickly and efficiently, while still giving due consideration to mitigation, resiliency, and environmental concerns

**Action C.1.1.2.1.** Incorporate policy guidance into state disaster recovery framework that advises a standardized process for municipalities to streamline environmental review, building code inspections and enforcement, and permitting to expedite resilient recovery

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Strategy C.1.1.3.** Transition the post-disaster Recovery Regions to function as Pre-Disaster Recovery and Resilience Networks to facilitate pre-disaster recovery and resiliency planning resources and coordinate preparedness and mitigation strategies

**Action C.1.1.3.1.** Develop long-term, pre-disaster regional recovery and resilience capacity-building assistance strategy

**Coordinating Agencies:** SEMA, FEMA

**Supporting Agencies:** U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Strategy C.1.1.4.** Identify and develop resources for pre-disaster recovery planning and coordination assistance and distribute to regions and communities

**Action C.1.1.4.1.** Develop online resource guide with up-to-date recovery resource information and connections, and disseminate to EMDs and other community officials and administrators

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept. of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Action C.1.1.4.2.** State Long-Term Disaster Recovery Planner or person filling that role creates or identifies pre-disaster recovery plan templates and distributes to communities, along with presentations on pre-disaster recovery planning in coordination with SDRC and FEMA FIT

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept. of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Strategy C.1.1.5.** Facilitate the development and understanding of lessons learned from previous

major flooding events, such as the 2016 and 2017 floods and other local disasters such as the 2011 tornadoes, which could help inform the state/regional/local community long-term recovery planning and strategies.

**Action C.1.1.5.1.** In collaboration with partners, develop and distribute a database of available Missouri-specific disaster recovery case studies, media reports, recovery project details/data, etc. demonstrating lessons learned for reference in recovery strategy development and implementation

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept. of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Objective C.1.2. State leadership and staff have the institutional skills and knowledge to implement the MDRF and pre-disaster recovery plans and to coordinate and manage long-term recovery.**

Intermediate

**Strategy C.1.2.1.** Identify, develop, and coordinate technical assistance, training, and applicable resources that enhance State capacity to exercise and implement the MDRF.

**Action C.1.2.1.1.** Deliver L-0089 NDRF Leadership Workshop training to state RSFs and associated long-term disaster recovery partners

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept. of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Action C.1.2.1.2.** Create and offer to state RSFs and related disaster recovery partners an MDRF-specific training similar to L-0089

**Coordinating Agencies:** SDRC/FEMA

**Supporting Partners:** U. S. Dept. of Homeland Security, American Planning Association, MACOG, RPC'S, and MLL

**Strategy C.1.2.2.** Identify, develop, and coordinate technical assistance, training, and applicable resources that enhance state/regional/local capacity to develop, coordinate, maintain, and exercise pre-disaster recovery coordinating frameworks and plans.

**Action C.1.2.2.1.** Schedule and implement regular state/federal RSF leadership coordination meetings during blue sky periods

**Coordinating Agencies:** SDRC

**Supporting Partners:** U. S. Dept. of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Action C.1.2.2.2.** Schedule and implement annual "mission readiness" MDRF training/exercise, to include all state and federal RSFs and other partners, and exercise disaster recovery coordination implementation utilizing specific scenarios and skill-building practices

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Objective C.1.3. State supports development of local pre-disaster recovery frameworks/plans for communities with most frequent historical disaster impact.**

Intermediate

**Strategy C.1.3.1.** State creates guidance document for local communities explaining how to develop a pre-disaster recovery framework that integrates with the new state framework

**Action C.1.3.1.1.** Provide CPCB guidance documents, tools, and other resources to assist local government in developing a pre-disaster recovery framework such as the "Pre-Disaster Recovery Planning Guide for Local Governments"

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Action C.1.3.1.2.** Distribute state guidance to local communities.

**Coordinating Agencies:** SDRC / FEMA

**Supporting Partners:** U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Action C.1.3.1.3.** Review and provide considerations/feedback on draft local pre- disaster recovery coordination plans/structures as requested

**Coordinating Agencies:** SDRC / FEMA

**Supporting Partners:** U. S. Dept of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Strategy C.1.3.2.** State coordinates delivery of workshops on pre-disaster recovery planning and community resilience to local governments

**Action C.1.3.2.1.** Attend and present at local government pre-disaster recovery workshops as requested

**Coordinating Agencies:** SDRC and Emergency Management Institute (EMI)

**Supporting Partners:** FEMA, CPCB

**Action C.1.3.2.2.** Deliver L-0210 "Recovery from Disaster: The Local Community Role" to interested communities

**Coordinating Agencies:** SDRC and Emergency Management Institute (EMI)

**Supporting Partners:** FEMA, CPCB HQ

**Objective C.1.4 Missouri and neighboring states create and develop a strategy for active participation in regional interstate task forces for resiliency planning, coordination, and collaboration (participation strategies by end of 2020; participation**

**continues through long-term).**

Long-term

**Strategy C.1.4.1** Facilitate the formation of, and provide ongoing support to task forces/working groups to address interstate regional sustainability and resiliency issue

**Action C.1.4.1.1.** Promote continued development of and participation in a 4-state Regional council task force for resiliency planning that includes Missouri, Iowa, Nebraska, and Kansas (MINK).

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept. of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

**Action C.1.4.1.2.** Continue to ensure incorporation of Recovery/Resilience planning and strategies into inter-state New Madrid Seismic Zone (NMSZ) plans and strategies/efforts and incorporate any applicable lessons learned from the 2019 storms and floods.

**Coordinating Agencies:** SEMA, FEMA

**Supporting Partners:** U. S. Dept. of Homeland Security, American Planning Association, MACOG, RPC'S, and MML

ECONOMIC

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## Economic Recovery

This section summarizes the key findings of the state-federal Economic Recovery Support Function (RSF) and defines recovery issues, goals, objectives, and strategies for economic recovery in Missouri.

It is important to note that this Recovery Support Strategy has been developed hand in hand with the State of Missouri Economic RSF. This unique collaboration has been a significant learning and capacity building experience on both sides. The State's commitment to a bilateral recovery process has ensured the development of realistic, Missouri-oriented strategies for economic recovery and resilience.

Economic Recovery Partners	
<b>Federal Economic Partners</b>	
Coordinating Agency	
Economic Development Administration (EDA)	
Primary Agencies	
Federal Emergency Management Agency (FEMA)	
U.S. Department of Agriculture (USDA)	
U.S. Department of Commerce (DOC)	
U.S. Department of Labor (DOL)	
U.S. Small Business Administration (SBA)	
U.S. Department of the Treasury (TREAS)	
Supporting Agencies	
Corporation for National and Community Services (CNCS)	
U.S. Department of Health and Human Services (HHS)	
U.S. Department of the Interior (DOI)	
U.S. Environmental Protection Agency (EPA)	
U.S. Department of Housing and Urban Development (HUD)	
<b>State Economic Partners</b>	
Coordinating Agency	
Missouri Department of Economic Development	
Strategic Members	
Missouri State Emergency Management Agency (SEMA)	
Missouri Department of Agriculture	
Missouri Department of Insurance, Financial Institutions and Professional Registration	
Missouri Department of Labor and Industrial Relations	
Missouri Office of Administration	
Missouri Association of Councils of Government	
Missouri Chamber of Commerce	
University of Missouri	
Support Critical Members	
Missouri Department of Conservation	
Missouri Department of Natural Resources	
Missouri State Parks Division	
Missouri Agriculture and Small Business Development Authority	
Missouri Public Transit Association	
Missouri Small Business and Technology Development Centers	
Missouri Office of the Attorney General	

Missouri Consumer Protection Division
Missouri Department of Health Senior Services
Missouri Department of Mental Health
Missouri Department of Public Safety
Missouri Veterans Commission
Missouri Department of Social Services
Missouri Department of Transportation (MODOT)
Missouri Economic Development Finance Association
Missouri Development Finance Board
Missouri Technology Corporation
Missouri Main Street Connection
Missouri Municipal League
Missouri Association of Counties
Missouri Economic Development Council
Missouri Association of Conventions and Visitors Bureaus
Missouri Community Betterment

The tornados, storms, and historic flooding of 2019 significantly impacted Missouri's economy, broadly affecting transportation systems, agricultural production, commercial activity, and the state's workforce.

The record-breaking flooding inundated 1.58 million acres of farmland, resulting in extreme, localized impacts to Missouri communities, many of which are dependent on agriculture. Production losses across the state totaled an estimated \$512 million and farms in counties like Holt, Atchison, St. Charles, Chariton, and Carroll received an average of over \$9 million each in flood-related indemnity payments for lost crops (USDA). In addition to preventing planting, flood and rain damage left crop fields either too muddy to harvest or forced farmers to harvest immature crops in an effort to access them before waters freeze in the winter. Continued flooding has also prevented crop insurance agents from fully evaluating crop damage and has made some land unfarmable. The additional impact to stored crops, and damage to crop land (from silt, debris, and other causes), could not be determined.

Impacts to businesses have been more difficult to quantify but are evident from damage assessments, Small Business Administration (SBA) loan data, and insurance claims. Major impacts to outdoor recreation (flooded parks, marinas, etc.) resulted in direct losses to the tourism industry and businesses that are largely dependent on the tourist population. For example, the Missouri Division of Tourism (2019) reported a loss of \$30.2 million (2.5%) in revenue in August 2019 compared to the previous year. Anecdotal, but extensive, information from individual businesses and statewide associations representing business, tourism, and local and regional governments, have noted sizable impacts. The "uncaptured" impact to businesses is significant.

Housing impacts were also considerable, increasing financial burdens on families and sometimes displacing them. Tornado and flood damage aggravated existing challenges related to affordable housing, and disproportionately affected low-income and rural families.

Impacts to farms, businesses, and the population were further exacerbated by long-term disruptions to transportation systems. Flooded roads and bridges inhibited recovery efforts and hindered the flow of supplies, commercial transport, and workforce commutes. Road closures and detours dramatically increased commutes for some residents (30 minutes to three hours), forcing many families to relocate in order to retain their employment. As floodwaters receded, some roads were no longer viable, and many sustained significant damage. Community roads used as detour routes for heavy commercial traffic, were particularly damaged.

Post-disaster, state and federal partners have struggled to quantify economic impacts to businesses and individuals. While major impacts to the state economy were clearly significant, specific supporting data was scattered, fragmented, and often missing. Identifying the aggregate and individual magnitude and consequences of these impacts on farms, businesses, and workers is essential to developing appropriate strategies for recovery and future resilience. Better and more accessible post-disaster data will greatly improve the ability to find and allocate resources.

## Key Findings

The State-Federal Economic RSF identified the following primary issues for economic recovery across Missouri:

- Difficulty assessing economic losses and impacts
- Disruption to business and loss of revenue
- Lack of resilient infrastructure
- Workforce Displacement.

### Recovery Actions – Time Frame Definition



Up to 1 year



1 – 3 years



Longer than 3 years

### **Recovery Issue A: Difficulty in assessing economic losses and impacts**

Post-disaster, the inability to adequately identify and quantify economic impact to affected businesses (agriculture, tourism, retail, etc.) makes it difficult to develop accurate and appropriate strategies that direct them to recovery and resiliency resources and support.

**Goal A.1: Comprehensive agriculture and business impact data is available in one place and can be used to quickly inform disaster and post disaster analysis.**

*Crosscutting with Agriculture RSF*

**Objective A.1.1: Develop a user-friendly system to survey all types of businesses, including farms and agribusinesses, in impacted communities/counties that generates actionable information.**



**Strategy A.1.1.1:** Develop a multi-agency state group to identify a comprehensive data collection and sharing system.

**Action A.1.1.1.1:** Identify workgroup partners.

**Coordinating Agency:** Missouri Department of Economic Development (DED), Missouri State Emergency Management Agency (SEMA)

**Supporting Partners:** U.S. Economic Development Administration (EDA), FEMA, U.S. Department of Agriculture (USDA), U.S. Department of Housing and Urban Development (HUD), Missouri Department of Agriculture (MDA), Missouri Department of Transportation (MoDOT), Missouri Department of Higher Education and Workforce (MoHEWD), Missouri Division of Tourism

**Action A.1.1.1.2:** Identify technical assistance to develop data collection structure.

**Coordinating Agency:** DED, SEMA, EDA

**Supporting Partners:** U.S. Small Business Administration (SBA), Missouri Association of Councils of Government (MACOG), Missouri Economic Development Council (MEDC), Small Business Development Centers (SBDC), Missouri Municipal League (MML), Missouri Association of Counties (MAC), Universities

**Strategy A.1.1.2:** Develop a simplified survey for local partners (i.e. chambers, regional planning commissions (RPC), economic development districts (EDD), trade groups, etc.) to gather key information on economic/business and agricultural impacts.

**Action A.1.1.2.1:** Identify other state and federal data system models to obtain lessons learned, guidance, and best practice approaches to adopt or modify for data collection and compilation (e.g. FEMA Pre-Disaster Recovery Planning Guide for Local Governments).

**Coordinating Agency:** DED, SEMA, EDA

**Supporting Partners:** FEMA, SBA, MACOG, Missouri Economic Research and Information Center (MERIC), MEDC, Trade Associations

**Action A.1.1.2.2:** Conduct assessment of past survey challenges and utilize findings to enhance future survey efforts.

**Coordinating Agency:** DED, SEMA, EDA

**Supporting Partners:** Universities, MACOG, Trade Associations

**Strategy A.1.1.3:** Develop or identify an easy-to-use app or digital platform to make business impact reporting as easy as possible.

**Action A.1.1.3.1:** Examine the utility of the SABER (Single Automated Business Exchange for Reporting) software or other application software.

**Coordinating Agency:** Missouri Office of Administration-Information Technology and Science Division, SBA

**Supporting Partners:** Universities, MACOG

**Strategy A.1.1.4:** Utilize local University research and analysis capacities among faculty and students for data collection and analysis.

**Action A.1.1.4.1:** Identify interested universities, departments, and faculty that are interested in collaborating and providing analysis.

**Coordinating Agency:** DED, SEMA, EDA

**Supporting Partners:** Universities

**Objective A.1.2: Functionalize a comprehensive database for collection and analysis of baseline and disaster impact data**

*Crosscutting with all RSFs*



**Strategy A.1.2.1:** Determine federal and state agencies that collect data relevant to disaster impact analysis to help assess data collection system needs.

**Action A.1.2.1.1:** Identify and inventory which relevant disaster impact data is collected by which federal and state agencies.

**Coordinating Agency:** DED, SEMA, EDA

**Supporting Partners:** FEMA, USDA, SBA, HUD, Missouri Division of Tourism, MDA, MoDOT, MERIC, Trade Associations, Missouri Department of Insurance, Financial Institutions, and Professional Registration (DIFP), Missouri University Extension

**Action A.1.2.1.2:** Identify data gaps and take steps to actively collect missing data.

**Coordinating Agency:** DED, SEMA, EDA

**Supporting Partners:** FEMA, USDA, SBA, HUD, Missouri Division of Tourism, MDA, MoDOT, MERIC, Trade Associations, DIFP, Missouri University Extension

**Action A.1.2.1.3:** Encourage state to seek grants to assist in the data collection process.

**Coordinating Agency:** DED, SEMA, EDA

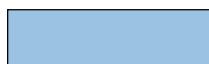
**Supporting Partners:** FEMA, USDA, SBA, HUD, Missouri Division of Tourism, MDA, MoDOT, MERIC, Trade Associations, DIFP, Missouri University Extension.

**Recovery Issue B: Disruption to businesses and loss of revenue**

Businesses (agriculture, tourism, retail, etc.) were severely impacted by physical damage and loss of revenue, which will greatly challenge their short and long-term recovery.

**Goal B.1: Businesses are able to maintain stable operations during and post disaster.**

**Objective B.1.1: Assist businesses by providing disaster planning and recovery resources (e.g., continuity of operations plans (COOP), insurance coverage options, sample emergency preparedness checklists, alternate worksite advantages, threat/vulnerability assessments, etc.).**



**Strategy B.1.1.1:** Provide outreach and training for businesses in Business Continuity Planning.

**Action B.1.1.1.1:** Identify and collaborate with relevant associations to develop/coordinate workshops and educational materials.

**Coordinating Agency:** SEMA, DED, SBA

**Supporting Partners:** EDA, Universities, Business Trade Organizations, MACOG, MEDC, Missouri Main Street Connection, Missouri Chamber of Commerce

**Strategy B.1.1.2:** Educate businesses on threat and vulnerability assessments.

**Action B.1.1.2.1:** Identify existing risk/threat assessment tools to disseminate and provide training on them.

**Coordinating Agency:** SEMA, SBA

**Supporting Partners:** EDA, SBA, Universities, Business Trade Organizations, MACOG, SBDCs

**Strategy B.1.1.3:** Educate businesses and other stakeholders on how to maximize existing federal and state recovery resources.

**Action B.1.1.3.1:** Provide key stakeholder organizations a comprehensive list of public and private disaster recovery resources and contacts (One Stop Shop).

**Coordinating Agency:** SEMA, SBA

**Supporting Partners:** EDA, Universities, Business Trade Organizations, MACOG

**Action B.1.1.3.2:** Increase direct outreach mechanisms to businesses and other stakeholders.

**Coordinating Agency:** SEMA, DED, SBA

**Supporting Partners:** EDA, Universities, Business Trade Organizations, MACOG

**Strategy B.1.1.4:** Survey businesses in Missouri on their preparedness activities (training, fact sheets, sample plans, list of web resources, checklists, etc.) and support needs to assist in being better prepared.

**Action B.1.1.4.1:** Develop survey.

**Coordinating Agency:** SEMA, DED

**Supporting Partners:** MDA, EDA, SBA, Universities, Business Trade Organizations

**Action B.1.1.4.2:** Utilize various public/private sector organizations to disseminate the survey.

**Coordinating Agency:** SEMA, DED, SBA

**Supporting Partners:** MDA, MACOG, Business Trade Organizations, Universities

**Action B.1.1.4.3:** After analysis of survey results, distribute a report to key stakeholders on what was learned.

**Coordinating Agency:** SEMA, DED

**Supporting Partners:** MERIC, Universities

**Action B.1.1.4.4:** Develop plan for follow up on identified activities.

**Coordinating Agency:** SEMA, DED

**Supporting Partners:** Universities

**Strategy B.1.1.5:** Identify and engage resource organizations who can assist businesses in the event of a disaster.

**Action B.1.1.5.1:** Develop an outreach plan to gain stakeholder buy-in. Plan should include contacts/resource organizations for sharing.

**Coordinating Agency:** SEMA, DED

**Supporting Partners:** SBA, MDA, MACOG, Business Trade Organizations, University of Missouri Extension

**Action B.1.1.5.2:** Work with stakeholder groups to develop a plan for the coordination of resources before, during, and after a disaster.

**Coordinating Agency:** SEMA, DED

**Supporting Partners:** MDA, MACOG, Business Trade Organizations, University of Missouri Extension

## **Objective B.1.2: Identify alternate business activities to continue operations during and immediately following a disaster.**

**Strategy B.1.2.1:** Provide training in disaster resilient business planning.

**Action B.1.2.1.1:** Identify list of potential participant businesses and key associations.

**Coordinating Agency:** DED, SEMA

**Supporting Partners:** Missouri Department of Revenue, SBA, FEMA, MACOG, Trade Associations

**Action B.1.2.1.2:** Collect and present best practices on business disaster recovery (e.g. location shifts, online presence, teleworking, etc.).

**Coordinating Agency:** SEMA, DED

**Supporting Partners:** EDA, FEMA, Universities

**Action B.1.2.1.3:** Organize and provide training (e.g. peer-to-peer, etc.).

**Coordinating Agency:** DED, SEMA

**Supporting Partners:** EDA, Universities, MACOG, Chambers of Commerce, MEDC

**Action B.1.2.1.4:** Provide resources to businesses to help them increase options for off-season revenue to offset potential losses during and immediately following a disaster.

**Coordinating Agency:** DED, SEMA

**Supporting Partners:** SBA, EDA, FEMA, Trade Associations, Universities, MACOG

## **Objective B.1.3: Businesses have necessary infrastructure to continue operations post-disaster.**

Long-term

**Strategy B.1.3.1:** Explore value of redundant/alternative infrastructure and venues to allow businesses (including tourism) to continue operations during disaster events.

**Action B.1.3.1.1:** Conduct cost benefit analysis of developing redundant/alternative infrastructure to enable operational continuity.

**Coordinating Agency:** MoDOT, U.S. Department of Transportation

**Supporting Partners:** DED, SEMA, MACOG

## Goal B.2: Businesses have a mechanism to communicate open/closed status during disaster.

**Objective B.2.1: Coordinate across local, public, and private entities to launch statewide marketing campaign post-disaster with a focus on retail and tourism businesses**

*Crosscutting with NCR RSF*

**Strategy B.2.1.1:** Develop marketing fund.

**Action B.2.1.1.1:** Identify private/public sources of funding for campaign.

**Coordinating Agency:** Missouri Division of Tourism

**Supporting Partners:** EDA, MACOG, Trade Associations

**Strategy B.2.1.2:** Provide tools to businesses and other stakeholders to guide them through post-disaster public relations campaigns.

**Action B.2.1.2.1:** Coordinate and share resources with relevant associations, EDDs, RPCs, Chambers, etc. for dissemination to businesses, etc. (improved visibility, public outreach, signage, social media, use of app (Strategy B.2.13).

**Coordinating Agency:** Missouri Division of Tourism

**Supporting Partners:** MACOG, Chambers of Commerce, EDDs, Trade Associations

**Strategy B.2.1.3:** Identify or develop an app with two-way communication for status reporting and viewing businesses/sites that self-report so customers see what is open. (App will also be an element in the impact assessment data collection structure).

**Action B.2.1.3.1:** Identify agency/organization to coordinate and house app

**Coordinating Agency:** Missouri Division of Tourism

**Supporting Partners:** MDA, Universities, Business Trade Organizations, MACOG

**Action B.2.1.3.2:** Ensure app is widely known by businesses and tourists (see Action B.2.1.2.1).

**Coordinating Agency:** Missouri Division of Tourism

**Supporting Partners:** MDA, MACOG, Chambers, EDDs, Trade Associations

**Goal B.3: Agricultural operations have greater disaster resilience and long-term sustainability.**

*Crosscutting with Agriculture RSF*

**Objective B.3.1: Assist agriculture operations in planning for continuity of operations**

**Strategy B.3.1.1:** Provide COOP training to agriculture farmers and producers.

**Action B.3.1.1.1:** Identify training providers and coordinate to deliver training.

**Coordinating Agency:** MDA, SEMA

**Supporting Partners:** SBA, Missouri University Extension

**Strategy B.3.1.2:** Develop and maintain a list of agriculture recovery resources and contacts at all levels to be shared across all stakeholders (farmers/producers and key support organizations).

**Action B.3.1.2.1:** Identify an agency/group to house recovery resources list.

**Coordinating Agency:** MDA, SEMA

**Supporting Partners:** SBA, Missouri University Extension

**Strategy B.3.1.3:** Engage Agri-tech cluster companies in discussion on resilience (alternate crops, livestock practices, technology use).

**Action B.3.1.3.1:** Identify organizations to engage with Agri-tech cluster.

**Coordinating Agency:** MDA, DED

**Supporting Partners:** EDA, Missouri University Extension

**Goal B.4: Public sector is more resilient and able to assist the business community post-disaster.**

*Crosscutting with CPCB RSF*

**Objective B.4.1: Provide the public sector with tools to increase resiliency practices and result in the enhanced capacity to substantively support the private sector.**

**Strategy B.4.1.1:** Provide training for community/county planning

**Action B.4.1.1.1:** Provide disaster resilience, recovery, grant writing, preparedness and mitigation training (including peer-to-peer training) at local, county, and district level.

**Coordinating Agency:** FEMA, SEMA

**Supporting Partners:** HUD, EDA, USDA, DED, MACOG, NGOs

**Strategy B.4.1.2:** Develop and maintain a package of recovery resources (technical and financial) to be broadly disseminated (i.e. one-stop clearing house of opportunities).

**Action B.4.1.2.1:** Identify agency and department to compile and maintain list.

**Coordinating Agency:** SEMA

**Supporting Partners:** FEMA, HUD, EDA

## **Objective B.4.2: Incorporate resilience and disaster preparedness into strategic planning at the local, regional, and state level.**



**Strategy B.4.2.1:** Encourage RPCs to incorporate resiliency and mitigation into Comprehensive Economic Development Strategies (CEDS).

**Action B.4.2.1.1:** EDA Denver Regional Office to review the suggested option to incorporate resiliency and provide feedback to RPCs.

**Coordinating Agency:** EDA, FEMA

**Supporting Partners:** SEMA, MACOG

**Strategy B.4.2.2:** Encourage incorporation of resiliency into local planning.

*Crosscutting with CPCB*

**Action B.4.2.2.1:** Identify state agency to coordinate planning efforts.

**Coordinating Agency:** FEMA, SEMA

**Supporting Partners:** DED, MACOG

**Strategy B.4.2.3:** Socialize Missouri Disaster Recovery Framework (MDRF) with state and local agencies.

**Action B.4.2.3.1:** Encourage state to continue to share and promote MDRF

**Coordinating Agency:** SDRC

**Supporting Partners:** EDA, DED

## **Recovery Issue C: Lack of resilient infrastructure**

Significant disruption to transportation systems (roads, water, rail, and air) resulted in workforce income losses, hardship, and displacement; supply chain disruptions; revenue loss to businesses (including agriculture) and government; roadway damage; and financial hardship for communities whose local roads were used for detours. Lack of broadband connectivity inhibits access to immediate disaster information exchange and hinders communication regarding recovery resources and programs (i.e. inability of PA applicants to access Grants Portal).

*Crosscutting with Infrastructure RSF*

**Goal C.1: Transportation agencies (including rail) and local systems are better prepared to efficiently resolve transportation disruptions and support economic sustainability and recovery to reduce economic impact on businesses.**

**Objective C.1.1: Improved coordination/communication among transportation agencies and locals to ensure as much accessibility as possible during disaster.**

**Strategy C.1.1.1:** Improve communication of which roads can/should be accessed during/post disaster.

**Action C.1.1.1.1:** Improve signage to drive traffic to best alternate routes (so vulnerable roads are less impacted).

**Coordinating Agency:** MoDOT, SEMA

**Supporting Partners:** MACOG, MML, MAC

**Action C.1.1.1.2:** Align MoDOT road closure and detour information with GPS routing platforms (i.e. Google Maps, Waze).

**Coordinating Agency:** MoDOT, SEMA

**Supporting Partners:** MACOG, MML, MAC

**Strategy C.1.1.2:** Develop and maintain a list of transportation contacts at all levels.

**Action C.1.1.2.1:** Encourage MoDOT to maintain the contact list.

**Coordinating Agency:** MoDOT

**Supporting Partners:** SEMA

**Objective C.1.2: Identify best (most hardened) alternative routes.**

Short-term

**Strategy C.1.2.1:** Conduct a study to ensure alternate routes are identified.

**Action C.1.2.1.1:** Encourage MoDOT and local governments to coordinate study on best alternative routes.

**Coordinating Agency:** MoDOT

**Supporting Partners:** MACOG, MML, MAC

**Objective C.1.3: Strengthen state-level communication and coordination with the rail industry.**

Short-term

**Strategy C.1.3.1:** Review information exchange protocols between stakeholders.

**Action C.1.3.1.1:** Determine responsible party for decision-making.

**Coordinating Agency:** MoDOT, US DOT-Federal Railroad Administration

**Supporting Partners:** MML, MAC, MACOG

**Objective C.1.4: Identification of areas on Interstates and highways most vulnerable to disasters and implement mitigation strategies.**

**Strategy C.1.4.1:** Conduct engineering survey.

**Action C.1.4.1.1:** Identify entity to conduct engineering survey.

**Coordinating Agency:** MoDOT, US DOT

**Supporting Partners:** Universities

**Strategy C.1.4.2:** Planning and allocation of MoDOT funds for strategic disaster-proofing of selected roads.

**Action C.1.4.2.1:** Determine grants/funding sources that can be utilized to complete an engineer study.

**Coordinating Agency:** MoDOT, US DOT

**Supporting Partners:** Universities

**Objective C.1.5: Communities whose roads are damaged by rerouted traffic will be able to repair and improve roads for anticipated future detour use.**

Short-term

**Strategy C.1.5.1:** Ensure that communities have access to, and knowledge of, resources (i.e. grants) to repair and enhance damaged local roads.

**Action C.1.5.1.1:** Create a unified resource list aimed at and disseminated to communities (federal, state, private, etc.) to include funding, non-grant accessible resources, guidance, relevant regulations, processes and mechanisms.

**Coordinating Agency:** MoDOT, US DOT

**Supporting Partners:** MML, MAC, MACOG

**Action C.1.5.1.2:** Clarify and disseminate parameters of local vs. state and federal funding repairs and repair eligibility.

**Coordinating Agency:** MoDOT, US DOT

**Supporting Partners:** MML, MAC, MACOG

## **Objective C.1.6: Community roads used for alternate routes are able to limit damage.**



**Strategy C.1.6.1:** Increase local control of detoured traffic (i.e. speed trailers, best-route controls, route ranking, etc.).

**Action C.1.6.1.1:** Clarify road management jurisdictions between MODOT and communities.

**Coordinating Agency:** MoDOT

**Supporting Partners:** MML, MAC, MACOG

## **Goal C.2: Communities and businesses, including rural areas, have internet connectivity.**

### **Objective C.2.1: Broadband connectivity is available throughout the state, including regional hubs, thus accessible to all communities.**



**Strategy C.2.1.1:** Educate key stakeholders (RPCs, county and local government, chambers, economic development groups) on available funding sources for studies, engineering and construction of systems.

**Action C.2.1.1.1:** Disseminate available information electronically and in-person.

**Coordinating Agency:** DED-Broadband, USDA-Rural Utilities Service

**Supporting Partners:** Federal Communications Commission (FCC), EDA, MACOG, MEDC, MML, MAC, Missouri Rural Electric Cooperatives, Trade Agencies.

**Strategy C.2.1.2:** Conduct a needs assessment to identify geographical/community areas without broadband service.

**Action C.2.1.2.1:** Continue coordination between DED-Broadband and FCC on mapping of service areas.

**Coordinating Agency:** DED-Broadband, USDA-Rural Utilities Service

**Supporting Partners:** FCC

**Strategy C.2.1.3:** Identify broadband providers who can work in Missouri.

**Action C.2.1.3.1:** Continue to collate existing service providers that can be maintained by DED-Broadband.

**Coordinating Agency:** DED-Broadband, USDA-Rural Utilities Service

**Supporting Partners:** FCC

**Strategy C.2.1.4:** Identify public/private funding sources for implementing broadband.

**Action C.2.1.4.1:** Continue collaboration between DED-Broadband, USDA-Rural Utilities Service, EDA, FCC and service providers to identify potential funding sources.

**Coordinating Agency:** DED-Broadband, USDA-Rural Utilities Service  
**Supporting Partners:** EDA, USDA, FCC

**Strategy C.2.1.5:** State to convene an ongoing working group to develop vision and strategies and support implementation.

**Action C.2.1.5.1:** Continue to support the working group that will help drive broadband throughout the state.

**Coordinating Agency:** DED-Broadband, USDA-Rural Utilities Service  
**Supporting Partners:** MACOG, MML, MAC

**Strategy C.2.1.6:** Support development and deployment of Agri-tech precision data use by incorporating “field” service in broadband plans.

**Action C.2.1.6.1:** Create partnership between DED-Broadband and Agri-tech companies that will ultimately assist the state and the companies on broadband utilization.

**Coordinating Agency:** DED-Broadband, USDA-Rural Utilities Service, MDA  
**Supporting Partners:** Agriculture Trade Associations, Information Technology Associations

## Recovery Issue D: Workforce Displacement

Disaster impacts to businesses, transportation, and housing resulted in workforce displacement, with many residents leaving their communities and some leaving the state. This contributed to increased financial burdens and reduced income for residents, decreased commercial activity, and decreased tax revenue for community governments.

### Goal D.1: Displaced workers are quickly identified and connected to job opportunities.

**Objective D.1.1: Use workforce programs/services to identify jobs available to displaced workers.**

Short-term

**Strategy D.1.1.1:** Prioritize displaced locals for recovery jobs.

**Action D.1.1.1.1:** Identify unemployed workers seeking jobs.

**Coordinating Agency:** Missouri Department of Labor (MoDOL)  
**Supporting Partners:** MoHEWD, Career Centers

**Strategy D.1.1.2:** Encourage outreach from career centers to connect displaced workers with

hiring local employers.

**Action D.1.1.2.1:** Provide information for employers to give to unemployed workers on potential jobs/job service organizations.

**Coordinating Agency:** MoDOL, MoHEWD

**Supporting Partners:** Career Centers

**Goal D.2: Displaced workers can continue to work or earn income at their accustomed employment.**

**Objective D.2.1: Identify options of employee retention and salary continuation through innovative methods (telework, insurance, pooled fund, etc.).**

**Strategy D.2.1.1:** Assist businesses in identifying ways to continue to employ workers remotely.

**Action D.2.1.1.1:** Identify and disseminate examples and best practices from other states.

**Coordinating Agency:** MoDOL, SEMA

**Supporting Partners:** Career Centers, MoHEWD

**Strategy D.2.1.2:** Educate employers on the use of "business interruption insurance" to pay employees for recovery actions.

**Action D.2.1.2.1:** Provide educational materials/resources to trade organizations, small business development centers, chambers and EDDs.

**Coordinating Agency:** MoDOL, MoDIFP

**Supporting Partners:** US DOL, MACOG, MEDC, Missouri Chamber of Commerce and Industry, Missouri Main Street Connection

**Objective D.2.2: Employers have contingency plans for supporting accommodations (lodging) for displaced workers with access to job sites.**

**Strategy D.2.2.1:** Inform employers on the value of developing plans for lodging employees.  
*Crosscutting with Housing RSF*

**Action D.2.2.1.1:** Provide written materials, outreach, and training.

**Coordinating Agency:** MoDOL, SBA

**Supporting Partners:** US DOL, MACOG, MEDC, Missouri Chamber of Commerce and Industry, Missouri Main Street Connection

**Objective D.2.3: Disaster affected workers/families are made aware of public and private benefits that they can access.**



**Strategy D.2.3.1:** Disseminate information through employment agencies, employers, and career centers.

**Action D.2.3.1.1:** Provide employers with a list of potential assistance resources for displaced workers/families.

**Coordinating Agency:** MoDOL, SBA

**Supporting Partners:** US DOL, MACOG, MEDC, Career Centers, NGOs.



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## Housing Recovery

This section summarizes damage assessment data contained in the housing section of the Mission Scoping Assessment as well as data and information included in the Housing Impact Assessment (the “Assessment”). The Assessment, dated January 21, 2020, also provides pre- and post-event housing data and identifies four (4) key preliminary areas for recovery consideration by the state and municipalities as they identify strategies and develop their long-term recovery plans.<sup>2</sup> These key recovery areas for consideration are:

1. Increased need for affordable, accessible housing
2. Increased need for sustainable/resilient housing
3. Increased mitigation efforts to prevent population loss
4. Expand regional capacity and funding for housing development

The Housing Recovery Support Function (RSF) worked in close collaboration with the State of Missouri’s Housing RSF in identifying options and developing strategies to address both pre-and post-event housing issues and concerns. Input was also provided by Housing RSF National Disaster Recovery Framework (NDRF) primary and supporting federal, state and local partner agencies. Working collectively, these housing recovery partners refined the key recovery considerations to include the following sub-components:

1. Reduce the cost burden for homeowners and renters
2. Reduce the number of substandard housing units in rural communities
3. Increase the utilization of building codes to reinforce resilient housing design and hazard mitigation
4. Expand the capacity of county, municipal and community agencies to participate in the recovery efforts

**Table 1:** List of Federal and State Housing Recovery Partners

DR-4451-MO Housing Recovery Partners	
Coordinating Agency	
Federal	State
U.S. Dept. of Housing and Urban Development (HUD)	Missouri State Treasurer’s Office and Missouri Housing Development Commission (MHDC)
Primary Agencies	
Federal	State
U.S. Dept. of Homeland Security (DHS)/FEMA	Missouri Department of Public Safety, State Emergency Management Agency (SEMA)
U.S. Dept. of Agriculture (USDA) – Rural Development	Missouri Department of Agriculture

<sup>2</sup> Housing Impact Assessment, Disaster Event # (DR-4451-MO), January 21, 2020

U.S. Dept. of Justice (DOJ)	Missouri Attorney General's Office
U.S. Dept. of Housing and Urban Development (HUD)	Missouri State Treasurer's Office and Missouri Housing Development Commission (MHDC)
<b>Supporting Agencies</b>	
Federal	State
Corporation for National and Community Service (CNCS)	Missouri Department of Social Services (DSS)
U.S. Dept. of Commerce (DOC)	Missouri Department of Economic Development (DED)
U.S. Dept. of Energy (DOE)	Missouri Department of Natural Resources Division of Energy
U.S. Dept. of Health and Human Services (HHS)	Missouri Department of Health and Senior Services (DHSS)
U.S. Dept. of Veteran's Affairs (VA)	Missouri Veterans Commission
Environmental Protection Agency (EPA)	Missouri Department of Natural Resources (DNR)
General Services Administration (GSA)	Missouri Office of Administration (OA)
Small Business Administration (SBA)	DED Division of Business and Community Services
U.S. Access Board	Missouri Governor's Council on Disability
American Red Cross (ARC)	Missouri Governor's Faith-based and Community Service Partnership for Disaster Recovery (The Partnership)
National Voluntary Organizations Active in Disaster (NVOAD)	Missouri Voluntary Organizations Active in Disaster (MOVOAD)

## Key Findings

- Increased need for affordable, accessible housing
- Increased need for sustainable/resilient housing
- Increased mitigation efforts to prevent population loss
- Expand regional capacity and funding for housing development

Working together, federal, state, and local partners developed the following goals, objectives, strategies, and actions to address these findings. The time frames for actions are defined as follows:

## **Recovery Actions – Time Frame Definition**

Short-term	Intermediate	Long-term
Up to 1 year	1 – 3 years	Longer than 3 years

## **Recovery Issue 1: Increased Need for Affordable, Accessible Housing**

Prior to the disaster, many rural and densely populated areas of the State had a shortage of housing that could be rented, purchased, or leased by residents at given market price points. The disaster has exacerbated this shortage. Nearly two-thirds (17) of the 26 counties designated for Individual Assistance have populations under 60,000. This includes: 9 counties with less than 20,000; 3 counties with less than 30,000; 1 county with less than 40,000; 1 county with less than 50,000, and 3 counties with less than 60,000.<sup>3</sup> Of these 17 counties with under 60,000 population, 16 of the counties do not have a city with a population greater than 20,000, thus making them eligible for USDA Rural development housing programs.

Other factors impacting affordable housing include, but are not limited to,

- higher than average poverty rates,
- aging housing stock,
- lack of affordable rural housing, and
- repetitive flooding of the housing stock.

### **Impacts on Low-Income Households**

Of the 26 declared counties, 10 had a higher average poverty rate compared to the average Missouri rate of 14.6%. These counties include Boone, 18.7%; Buchanan, 17.3%; Carroll, 18.4%; Greene, 18.5%; Jackson, 15.9%; Jasper, 17.3%; Livingston, 17.9%; McDonald, 19%; Miller, 16.5%; Pike, 15.1%; and Saline, 17.3%. Important to note is Greene and McDonald Counties also experienced repetitive flooding loss from DR-4317 and DR-4250.<sup>4</sup>

In addition to the lack of affordable housing, there is an urgency to preserve the current affordable housing stock. According to the National Low-Income Housing Coalition in its 2018 Preservation Profile, “HUD and USDA programs play an important role in providing affordable homes to extremely low-income (ELI) families. Many of the publicly supported homes, however, face expiring rent

<sup>3</sup>Census Bureau 2018 Population Estimates; 2017 ACS 5-year data; FEMA IA Data (FIDA 21196)

<sup>4</sup>US Census Bureau 2017 ACS 5-year data

<https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

restrictions and are at risk of becoming unaffordable to the state's lowest income families.”<sup>5</sup> Key profile facts include: there is a shortage of 119,751 affordable and available rental homes for ELI renters and 138,001 ELI households are spending more than half of their income on rent. Severely cost burdened poor households are more likely than other renters to sacrifice other necessities like healthy food and healthcare to pay the rent, and to experience unstable housing situations like evictions. Finally, there are 104,073 publicly supported rental homes; however, 5,949 publicly supported rental homes with affordability restrictions are expiring in the next 5 years.

## Aging Housing Stock

According to 2017 ACS data, 1,302,332 (54.9%) of all housing units in Missouri were built before 1980, leading to signs of aging and the need for substantial rehabilitation. Substandard housing is a concern for many households in the state: Census Data indicates there are 16,885 housing units in Missouri that meet the Census Bureau’s definition of substandard housing. In addition, many other units have serious deficiencies in their electrical or plumbing systems, lack safe or adequate heating systems, or have other major structural deficiencies and need substantial rehabilitation but do not meet the definition of substandard housing. Without specific mitigation programs and incentives or funds for resiliency measures (both damaged and unharmed) to the aging housing stock repairs become more expensive and may negatively impact an already existing shortage of affordable housing.<sup>6</sup>

## Repetitive Events

As shown in Table 2 below, 10 out of the 26 DR-4451 declared counties have experienced repetitive flooding impacts to their housing stock compared to DR-4317 (MDD Declared on June 2, 2017) and DR-4250 (MDD Declared on January 21, 2016). This includes seven counties that have experienced flooding in all three major disaster declarations. According to the National Disaster Recovery Support Advance Evaluation Report for DR-4250, March 9, 2016, there were 433 major damage or destroyed homes amongst the 1,382 IA cumulative registrants in these 10 overlapping counties.<sup>7</sup> Also, according to DR-4317 Recovery Support Strategy, October 5, 2017, there were 645 damaged and 5 destroyed homes amongst the 1,160 IA cumulative registrants in the 7 counties that overlapped DR-4451.<sup>8</sup>

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<sup>5</sup>National Low Income Housing Coalition, 2018 Missouri Preservation Profile  
<https://preservationdatabase.org/reports/preservation-profiles/>

<sup>6</sup>State of Missouri 2019 Action Plan <https://dss.mo.gov/fsd/esg/pdf/action-plan-draft-2019.pdf>

<sup>7</sup>National Disaster Recovery Support Advance Evaluation Report, FEMA-4250-DR-MO, March 9, 2016

<sup>8</sup>Recovery Support Strategy, FEMA-4317-DR-MO, October 5, 2017

**Table 2:** Comparison of Damaged/Destroyed Homes in DR-4451, DR-4317, and DR-4250

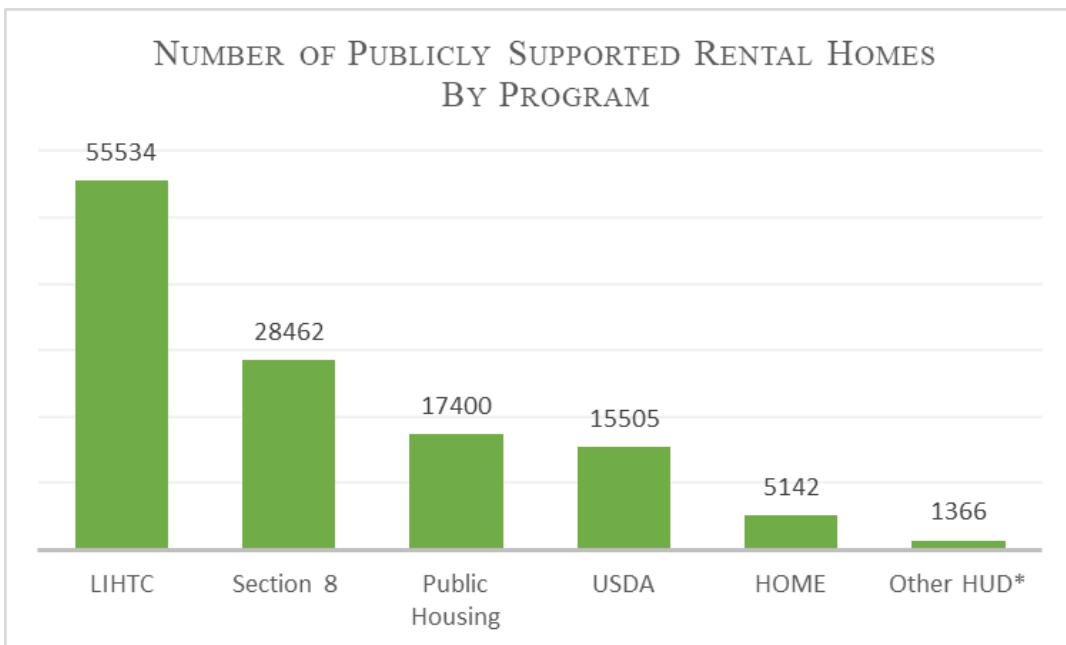
Counties with repetitive losses	DR-4451-MO April 29, 2019- July 5, 2019 # of Damaged or Destroyed	DR-4317-MO April 28, 2017- May 11, 2017 # of Damaged or Destroyed	DR-4250-MO December 23, 2015- January 9, 2016 # of Damaged or Destroyed
Cole	85		2
Greene	37	22	5
Jasper	68	28	13
Jefferson	12	256	238
Lincoln	92		5
McDonald	57	79	74
Newton	52	149	22
Osage	12	29	12
Pulaski	13	82	13
St. Charles	348		49

In addition to the lack of affordable housing, there is an urgency to preserve the current affordable housing stock. According to the National Low-Income Housing Coalition in its 2018 Preservation Profile, “HUD and USDA programs play an important role in providing affordable homes to extremely low-income (ELI) families. Many of the publicly supported homes, however, face expiring rent restrictions and are at risk of becoming unaffordable to the state’s lowest income families.”<sup>9</sup> Key profile facts include: there is a shortage of 119,751 affordable and available rental homes for ELI renters and 138,001 ELI households are spending more than half of their income on rent. Severely cost burdened poor households are more likely than other renters to sacrifice other necessities like healthy food and healthcare to pay the rent, and to experience unstable housing situations like evictions. Finally, there are 104,073 publicly supported rental homes; however, 5,949 publicly supported rental homes with affordability restrictions are expiring in the next 5 years.

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<sup>9</sup>National Low-Income Housing Coalition, 2018 Missouri Preservation Profile  
<https://preservationdatabase.org/reports/preservation-profiles/>

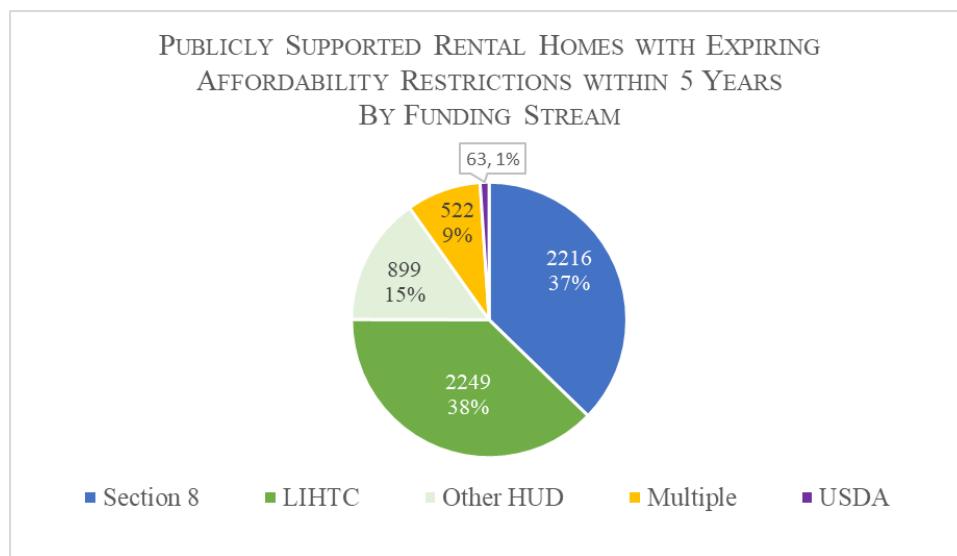
**FIGURE 1: PUBLICLY SUPPORTED RENTAL HOMES BY PROGRAM**



Source: National Low-Income Housing Coalition, 2018 Missouri Preservation Profile

Over half of publicly supported rental homes across the state receive Low Income Housing Tax Credits<sup>10</sup>. In Figure 2, “Other HUD” includes Section 236 HUD Insured Mortgages, Section 202 Direct Loans, and State Section 236.

**FIGURE 2: EXPIRING AFFORDABILITY RESTRICTIONS WITHIN 5 YEARS BY FUNDING STREAM**

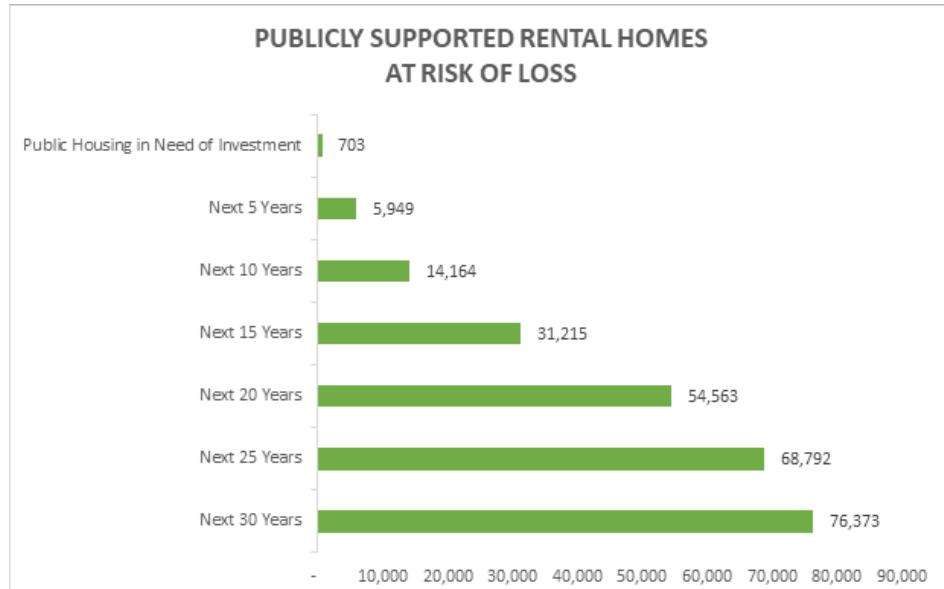


Source: National Low-Income Housing Coalition, 2018 Missouri Preservation Profile

<sup>10</sup>Rental units can be supported by multiple programs.

More than one-in-twenty publicly supported rental homes face an expiring affordability restriction in the next 5 years and 703 public housing units that need immediate investment.<sup>11</sup>

**FIGURE 3: PUBLICLY SUPPORTED RENTAL HOMES AT RISK OF LOSS**



Source: National Low-Income Housing Coalition, 2018 Missouri Preservation Profile

### Goal A.1: Expanded Housing Options

**Objective A.1.1: MHDC Rental Production program create an increase of 900 affordable housing units annually in low income and rural communities.**

**Strategy A.1.1.1:** Identify funding opportunities from multiple sources to permit affordable housing development.

**Action A.1.1.1.1:** State and local governments identify available resources.



**Coordinating Agency:** State/Missouri Housing Development Commission (MHDC)

**Supporting Partners:** HUD, USDA, Local Governments, Regional Planning Commissions (RPC), Community Action Agencies (CAA), Community Housing Development Organizations (CHDO), Community Development Corporations

<sup>11</sup> Indicated by a REAC (Real Estate Assessment Center) score of less than 60.

(CDC), Non-Governmental Organizations (NGO), Faith-Based Organizations, and Non-profits

**Action A.1.1.1.2:** Engage philanthropic, grant foundations, and other financial intermediaries that support affordable housing development.



**Coordinating Agency:** State/MHDC/Consultants/Developers

**Supporting Partners:** HUD, USDA, Local Governments, Municipalities, RPCs, CAAs, CHDOs, CDCs, NGOs, Faith-Based Organizations, and Non-profits

**Action A.1.1.1.3:** Leverage existing federal housing programs in the state (HUD, USDA, VA, and FDIC).



**Coordinating Agency:** State/MHDC

**Supporting Partners:** HUD, USDA, Local Governments, Municipalities, RPCs, CAAs, CHDOs, CDCs, NGOs, Faith-Based Organizations, and Non-profits

**Strategy A.1.1.2:** Use the available state and national funding programs to maximize the development and retention of affordable housing.

**Action A.1.1.2.1:** Coordinate with public and private developers to explore housing development opportunities, including utilizing Federal Low-Income Housing Tax Credits (LIHTC).



**Coordinating Agencies:** MHDC

**Supporting Partner:** Local Governments, Municipalities, RPCs, CAAs, CHDOs, CDCs, NGOs, Faith-Based Organizations, and Non-profits, Developers, Missouri Association of Realtors, Real Estate Professionals, Missouri Bankers Association, National Association of Housing and Redevelopment Officials (NAHRO), Financial Institutions

**Action A.1.1.2.2:** Identify shovel-ready housing proposals that could be funded and expedited by the state.

Long-term

**Coordinating Agency:** State/MHDC/Department of Economic Development (DED)/Consultants  
**Supporting Partners:** Local Governments, Municipalities, RPCs, CAAs, CHDOs, CDCs, NGOs, Faith-Based Organizations, and Non-profits

**Action A.1.1.2.3:** Leverage CDBG, CDBG-DR, and CDBG-MIT funding opportunities.



**Coordinating Agency:** DED  
**Supporting Partners:** MHDC, Local Governments, Municipalities, Consultants, RPCs, CDCs, Developers, and Financial Institutions

**Action A.1.1.2.4:** Leverage HOME funding opportunities.



**Coordinating Agency:** MHDC  
**Supporting Partners:** Local Governments, Municipalities, CHDOs, and Developers

**Action A.1.1.2.5:** Leverage Housing Trust Funds (federal, state and local) to develop affordable housing.



**Coordinating Agency:** MHDC  
**Supporting Partners:** Local Governments, Municipalities, CHDOs, Non-profits, and Developers

**Action A.1.1.2.6:** Leverage Habitat for Humanity's capacity and resources to develop affordable housing.



**Coordinating Agency:** Habitat for Humanity Organizations throughout the State  
**Supporting Partners:** Local Governments, Municipalities, CHDOs, State Voluntary Agency Liaison (VAL), MOVOAD, COADS, and Developers.

**Action A.1.1.2.7:** Conversion of Non-Residential Structure to Housing. Opportunities to convert vacant non-residential structure into housing could be explored. There may be

vacant buildings to include shuttered hospitals, schools, factories, stores, and other vacant properties that can be converted to affordable housing projects.



**Coordinating Agency:** Local Jurisdictions, Municipalities, RPCs, CAAs, and State VAL

**Supporting Partners:** HUD, USDA, State, Philanthropic Organizations, and Foundations

**Action A.1.1.2.8:** Facilitate local support for affordable housing and reinstitution of the State LIHTC program.



**Coordinating Agency:** Missouri Workforce Housing Association (MOWHA)

**Supporting Partners:** HUD, USDA, MHDC Local Governments, Municipalities, RPCs, CAAs, CHDOs, CDCs, NGOs, Faith-Based Organizations, Non-profits, Developers, NAHRO, Missouri Real Estate Association, Real Estate Professionals, Missouri Bankers Association, and Financial Institutions.

**Action A.1.1.2.9:** Promote the adoption and/or increase in Housing Bond funds.



**Coordinating Agency:** MHDC/DED

**Supporting Partners:** Local Governments, Municipalities, RPCs, CAAs, CHDOs, CDCs, Non-profits, Developers, NAHRO, Missouri Real Estate Association, Real Estate Professionals, Missouri Bankers Association, and Financial Institutions.

**Action A.1.1.2.10:** Organize State-wide Disaster Housing taskforce to include local, state, federal, and nonprofit housing practitioners.



**Coordinating Agency:** SEMA

**Supporting Partners:** MHDC, DED, RPCs, CAAs, CHDOs,

CDCs, NGOs, Faith-Based Organizations, Non-profits, Developers, NAHRO, Missouri Real Estate Association, Real Estate Professionals, Missouri Bankers Association, and Financial Institutions.

**Action A.1.1.2.11:** Federal agencies (HUD, FDIC, and FEMA) and State partners host a Disaster Affordable Housing Development Summit in Kansas City, Missouri.



**Coordinating Agency:** FDIC, HUD, and MHDC  
**Supporting Partners:** Local Governments, Municipalities, RPCs, CAAs, CHDOs, CDCs, Non-profits, Developers, NAHRO, Missouri Real Estate Association, Real Estate Professionals, Missouri Bankers Association, and Financial Institutions.

**Action A.1.1.2.12:** Leverage FHA Market Rate Multifamily Mortgage Insurance Program Section 221(d)4 to facilitate new construction and substantial rehabilitation of multifamily housing. FHA mortgage insurance lowers risk to lenders, which increases opportunities for developers.



**Coordinating Agency:** HUD  
**Supporting Partners:** Non-profits, Private Developers, HUD-Approved Multifamily Lenders, and Financial Institutions

**Action 1.1.2.13:** Leverage FHA Market Rate Multifamily Mortgage Insurance Program Section 207/223(f) to facilitate the purchase or refinancing of existing multifamily rental housing. FHA mortgage insurance lowers risk to lenders which increases opportunities for developers.



**Coordinating Agency:** HUD  
**Supporting Partners:** Non-Profits, Private Developer HUD-Approved Multifamily Lenders, and Financial Institutions.

**Action A. 1.1.2.14:** Leverage USDA Section 538 Multifamily Housing Loan Guarantee program to construct, improve, and purchase of multi-family rental housing for low to moderate income families and individuals. (The Agency offers guarantees of up to 90%

of the loan amount; for-profit entities may borrow up to 90% and non-profit entities may borrow up to 97% of the total development cost or appraised value, whichever is less; minimum term of 25 years and maximum term of 40 years; interest rate negotiated between the lender and the borrower is fixed for the life of the loan guarantee. Complexes must be at least five units).



**Coordinating Agency:** USDA

**Supporting Partners:** Private Lenders, State and Local Government Entities, Non-Profit Organizations, and For-Profit Organizations, including Limited Liability Companies (LLC).

**Action A.1.1.2.15:** Conduct an FDIC, HUD, and State Disaster Recovery virtual roundtable, webinar designed for financial institutions, especially Community Reinvestment Act (CRA) and compliance officers. The webinar will review current disaster recovery activities provide information about resources to assist low- and moderate-income families and review types of community development activities that can receive CRA consideration.



**Coordinating Agency:** FDIC

**Supporting Partners:** HUD, DED, MHDC, State Emergency Management Agency (SEMA), SBA, and Office of the Comptroller of the Currency (OCC).

**Action A.1.1.2.16:** Leverage USDA Section 502 Single Family Housing Direct Loan Program. Loan funds may be used to help low-income individuals or households purchase homes in rural areas. Funds can be used to build, repair, renovate or relocate a home, or to purchase and prepare sites, including providing water and sewage facilities. Manufactured homes must be new. Modular homes are included.



**Coordinating Agency:** USDA Rural Development

**Supporting Partners:** Applicants, State Licensed Inspectors and Settlement Service Providers.

**Action A.1.1.2.17:** Leverage USDA Single Family Housing Guaranteed Loan Program. This program assists approved lenders in providing low- and moderate-income households the opportunity to own adequate, modest, decent, safe and sanitary dwellings

as their primary residence in eligible rural areas. Eligible applicants may build, rehabilitate, improve or relocate a dwelling in an eligible rural area. The program provides a 90% loan note guarantee to approved lenders in order to reduce the risk of extending 100% loans to eligible rural homebuyers.



**Coordinating Agency:** USDA Rural Development  
**Supporting Partners:** Applicants, Approved Lenders, and State Guaranteed Loan Coordinator

**Action A.1.1.2.18:** Leverage USDA 504 Single Family Housing Repair Loan and Grant program. This program provides loans to very-low-income homeowners to repair, improve, or modernize their homes, or provides grants to very-low-income elderly homeowners to remove health and safety hazards. To qualify, you must be the homeowner and occupy the house, be unable to obtain affordable credit elsewhere, have a family income below 50 percent of the area median income, and for grants, be age 62 or older and not be able to repay a repair loan. Maximum loan is \$20,000. Maximum grant is \$7,500. They may be combined for up to \$27,500.



**Coordinating Agency:** USDA Rural Development  
**Supporting Partners:** Applicants and USDA Home Loan Specialist

**Action A.1.1.2.19:** Leverage USDA 514 Farm Labor Housing Loan and Grant program to develop housing (construction, improvement, repair or purchase) for year-round and migrant or seasonal domestic farm laborers. Housing may be constructed in urban or rural areas, as long as there is a demonstrated need.



**Coordinating Agency:** USDA Rural Development  
**Supporting Partners:** Applicants (Farmers, associations of farmers and family farm corporations, associations of farmworkers and nonprofit organizations\*, most State and local governmental entities\*, and federally recognized Tribes\*  
\*Eligible to apply for grants and loans.

**Action A.1.1.2.20:** Leverage USDA 523 and 524 Rural Housing Site Loans to purchase and develop housing sites for low- and moderate-income families. Rural Housing site loans provide two types of loans to purchase and develop housing sites for low- and moderate-income families: Section 523 loans are used to acquire and develop sites only for housing to be constructed by the Self-Help method. Section 524 loans are made to acquire and develop sites for low- or moderate-income families, with no restriction as to the method of construction. Low-income is defined as between 50-80% of the area median income (AMI); the upper limit for moderate income is 115% of the AMI.



**Coordinating Agency:** USDA Rural Development  
**Supporting Partners:** Private or Public Non-Profit Organizations, and federally recognized Tribes

**Action A.1.1.2.21:** Leverage USDA Mutual Self-Help Housing Technical Assistance Grants to qualified organizations to help them carry out local self-help housing construction projects. Provides grants to qualified organizations to help them carry out local self-help housing construction projects. Grant recipients supervise groups of very-low- and low-income individuals and families as they construct their own homes in rural areas. The group members provide most of the construction labor on each other's homes, with technical assistance from the organization overseeing the project. Funds can be used to give technical and supervisory assistance to participating families to; help other organizations provide self-help technical and supervisory assistance; recruit families, help them complete loan applications and carry out other related activities that enable them to participate.



**Coordinating Agency:** USDA Rural Development  
**Supporting Partners:** Government Non-Profit Organizations, Private Non-Profit Organizations, and federally recognized Tribes

**Action A.1.1.2.22:** Leverage HUD FHA 203(h) Mortgage Insurance for Disaster Victims to purchase or for reconstruction of a one-family home. This program provides mortgage insurance to protect lenders against the risk of default on mortgages to qualified disaster victims. Individuals are eligible for this program if their homes are located in an area that was designated by the President as a disaster area and if their homes were destroyed or damaged to such an extent that reconstruction or replacement is necessary. Insured mortgages may be used to finance the purchase or reconstruction of a one-family home that will be the principal residence of the homeowner. The borrower's application for mortgage insurance must be submitted to the lender within one year of the President's declaration of the disaster.



**Coordinating Agency:** HUD Single-Family  
**Supporting Partners:** FHA-Approved Lending Institutions, FHA Resource Center, and Housing Counseling Agencies

**Action A.1.1.2.23:** Leverage HUD FHA 203(k) Rehabilitation Mortgage Insurance to purchase or refinance a home and the cost of its rehabilitation or finance the rehabilitation of an existing home.



**Coordinating Agency:** HUD Single Family  
**Supporting Partners:** FHA-Approved Lending Institutions, FHA Resource Center, and Housing Counseling Agencies

**Action A.1.1.2.24:** Leverage HUD Manufactured Housing (Title I) Program. This program insures mortgage loans made by private lending institutions to finance the purchase of a new or used manufactured home.



**Coordinating Agency:** HUD Single Family  
**Supporting Partners:** FHA-Approved Lending Institutions, FHA Resource Center, and Housing Counseling Agencies

**Action A.1.1.2.25:** Leverage Federal Home Loan Bank. The Federal Home Loan Bank system is made up of twelve Federal Home Loan Banks (FHLBs) that are government-sponsored enterprises involved in housing and community economic development. The System provides its members (members include thrift institutions, commercial banks, credit unions, insurance companies, and certified community development financial institutions with a source of funding for mortgages and asset-liability management; liquidity for a member's short-term needs; and additional funds for housing finance and community development. The following programs are available for affordable housing development: (A) Affordable Housing Program; (B) Community Investment Program; (C) Community Investment Cash Advance; (D) New Market Tax Credit Initiative; (E) Economic Development Grants; (F) Urban Development Advances; (G) Rural Development Advances; and (H) Letters of Credit.

Long-term

**Coordinating Agency:** Federal Home Loan Banks  
**Supporting Partners:** Developers, Thrift Institutions, Commercial Banks, Credit Unions, Insurance Companies, and Certified Community Development Financial Institutions

**Action A.1.1.2.26:** Rehabilitate and redevelop damaged federally subsidized housing.



**Coordinating Agency:** Multifamily Private Owners and PHAs.  
**Supporting Partners:** HUD, USDA, MHDC, and Financial Institutions

**Action A.1.1.2.27:** Explore affordable housing development in Opportunity Zones. In the 22 counties designated for both Individual Assistance and Public Assistance, 13 counties have a total of 63 Qualified Opportunity Zone tracts. Including: Boone 1; Buchanan 2; Carroll 1; Chariton 1; Cole 3; Jackson 43; Jasper 1; Lafayette 2; Lincoln 1; Miller 1; Newton 2; Pulaski 2; and Saline 3. Of the 4 counties designated Individual Assistance only, Green County has 10 Opportunity Zone tracts. Opportunity Zones may provide the catalyst for investors to develop affordable housing.



**Coordinating Agency:** State, Local Governments, and Municipalities  
**Supporting Partners:** HUD, USDA, MHDC, Developers, and Financial Institutions

**Action A.1.1.2.28:** Leverage HUD Self-Help Homeownership Opportunity Program (SHOP). SHOP authorizes HUD to make competitive grants to national and regional nonprofit organizations and consortia that have experience in providing or facilitating self-help housing opportunities.

Long-term

**Coordinating Agency:** HUD  
**Supporting Partners:** RPCs, CAAs, CHDOs, CDCs, Non-profits, Faith-Based Organizations, and Financial Institutions

**Action A.1.1.2.29:** Leverage Department of Treasury Community Development Financial Institution Fund (CDFI Fund). Offering tailored resources and innovative programs that invest federal dollars alongside private sector capital, the CDFI Fund serves mission-driven financial institutions that take a market-based approach to supporting economically disadvantaged communities. These mission-driven organizations are encouraged to apply

for CDFI Certification and participate in CDFI Fund programs that inject new sources of capital into neighborhoods that lack access to financing. Including the following programs: (A) Bank Enterprise Award Program; (B) Capital Management Fund; (C) CDFI Bond Guarantee Program; and (D) New Markets Tax Credit Program.



**Coordinating Agency:** Department of Treasury

**Supporting Partners:** Individuals, Businesses, State, Local Governments, Municipalities, Financial Institutions and Developers

**Action A.1.1.2.30:** Leverage USDA Multifamily and HUD's nationwide Multifamily and PHA vacancy lists. Disaster preferences are an option to add to the administrative plan.



**Coordinating Agency:** HUD/USDA

**Supporting Partners:** MHDC, PHAs and Multifamily Property Owners

**Action A.1.1.2.31:** Leverage HUD 203(B) Basic Home Mortgage Loan Program.



**Coordinating Agency:** HUD Single-family

**Supporting Partners:** HUD-Approved Lenders, Financial Institutions, Real Estate Agencies, and Realtors.

**Action A.1.1.2.32:** Leverage MHDC First-time Homebuyers Programs, including "First Place" Loan Program, Mortgage Credit Certificate, and Next Step Program



**Coordinating Agency:** MHDC

**Supporting Partners:** Property Owners, Financial Institutions, Real Estate Agencies, and Realtors

**Action A.1.1.2.33:** Leverage HUD Housing Choice Voucher Program. The housing choice voucher program is the federal government's major program for assisting very low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market.

Long-term

**Coordinating Agencies:** PHAs  
**Supporting Partner:** HUD

**Strategy A.1.1.3:** Use available state and national programs to maximize the development of accessible housing for individuals with Access and Functional Needs (AFN).

**Action A.1.1.3.1:** Leverage HUD Section 811 Supportive Housing for Persons with Disabilities program to develop and subsidize rental housing with the availability of supportive services for very low- and extremely low-income adults with disabilities. The newly reformed Section 811 program is authorized to operate in two ways: (1) the traditional way, by providing interest-free capital advances and operating subsidies to nonprofit developers of affordable housing for persons with disabilities; and (2) providing project rental assistance to state housing agencies. The assistance to the state housing agencies can be applied to new or existing multifamily housing complexes funded through different sources, such as federal Low-Income Housing Tax Credits, federal HOME funds, and other state, federal, and local programs.

**Coordinating Agencies:** HUD

**Supporting Partner:** MHDC, Local Jurisdictions, Municipalities, RPCs, CAAs, CHDOs, CDCs, Non-profits, Financial Institutions, and Developers

**Action A.1.1.3.2:** Leverage HUD Section 202 Supportive Housing for the Elderly program. It provides very low-income elderly with options that allow them to live independently but in an environment that provides support activities such as cleaning, cooking, transportation, etc. This program targets extremely low-income at or below 30 percent of AMI, and at least one member of the household must be 55 and older. The capital advance does not have to be repaid as long as the project serves very low-income elderly persons for 40 years.

**Coordinating Agencies:** HUD

**Supporting Partner:** MHDC, Local Jurisdictions, Municipalities, RPCs, CAAs, CHDOs, CDCs, Non-profits, Financial Institutions, and Developers

**Action A.1.1.3.3:** Leverage Veterans Office of Construction and Facilities Management to construct/develop accessible housing.



**Coordinating Agencies:** VA

**Supporting Partner:** HUD, MHDC, Financial Institutions, and Developers

**Action A.1.1.3.4:** Leverage Center for Independent Living and non-profit organizations that provide accessibility work for owner-occupied homes for people with access and functional needs.



**Coordinating Agencies:** Missouri Volunteers Active in Disasters (MOVOAD)

**Supporting Partner:** Local Governments, Municipalities, Department of Mental Health, Department of Aging, CAAs, and US DHHS

**Action A.1.1.3.5:** Leverage Missouri Housing Trust Fund to make homes accessible.



**Coordinating Agencies:** MHDC

**Supporting Partner:** CAAs and NGOs

**Action A.1.1.3.6:** Leverage HOME funding for Home Repair Opportunity Program (HeRO) to make homes accessible.



**Coordinating Agencies:** MHDC

**Supporting Partner:** NGOs

**Action A.1.1.3.7:** Leverage USDA Section 504 Home Repair Loan and Grant Program, which provides funds to modify homes for accessibility.



**Coordinating Agencies:** USDA Rural Development

**Supporting Partner:** Applicants and USDA Home Loan Specialist

**Action A.1.1.3.8:** Leverage HUD Fair Housing and Equal Opportunity (FHEO) Department with education and outreach.



**Coordinating Agencies:** HUD FHEO

**Supporting Partner:** Fair Housing Initiatives Program (FHIP) and Fair Housing Assistance Program (FHAP) partners.

**Action A.1.1.3.9:** Leverage HUD Certified Housing Counseling Agencies.



**Coordinating Agencies:** HUD-Approved Housing Counseling Agencies

**Supporting Partner:** HUD, MHDC, RPCs, CAAs, Non-Profits, Faith-Based Organizations, and NGOs.

**Action A.1.1.3.10:** Leverage Housing Opportunities for Persons with AIDS (HOPWA).



**Coordinating Agencies:** HUD Community Planning and Development

**Supporting Partner:** MHDC, Entitlement Communities, and Public Housing Authorities

**Action A.1.1.3.11:** Leverage USDA Section 533 Housing Preservation Grant. It provides grants to sponsoring organizations for the repair or rehabilitation of housing owned or occupied by low- and very-low-income rural citizens. Eligible expenses include: Repairing or replacing electrical wiring, foundations, roofs, insulation, heating systems and water/waste disposal systems; handicap accessibility features; labor and materials; and administrative expenses.



**Coordinating Agencies:** USDA

**Supporting Partner:** Local Governments, Non-Profits, and federally recognized Tribes

**Action A.1.1.3.12:** Leverage HUD Veterans Affairs Supportive Housing (VASH) Program. The HUD-Veterans Affairs Supportive Housing (HUD-VASH) program combines Housing Choice Voucher (HCV) rental assistance for homeless Veterans with

case management and clinical services provided by the Department of Veterans Affairs (VA). The VA provides these services for participating Veterans at VA medical centers (VAMCs) and community-based outreach clinics.

**Coordinating Agencies:** VA

**Supporting Partner:** HUD, PHAs, VA Hospital, and Service Providers.

**Action A.1.1.3.13:** Leverage federal Low-Income Housing Tax Credits (LIHTC) to develop accessible housing.

**Coordinating Agencies:** MHDC

**Supporting Partner:** Local Governments, Municipalities, RPCs, CAAs, CHDOs, CDCs, NGOs, Faith-Based Organizations, and Non-profits, Developers, Missouri Association of Realtors, Real Estate Professionals, Missouri Bankers Association, National Association of Housing and Redevelopment Officials (NAHRO), and Financial Institutions

## **Recovery Issue 2: Increased Need for Sustainable/Resilient Housing**

Disasters reduce already stressed housing stock, but also exacerbate the need for more sustainable and resilient housing. Resilient design is the intentional design of buildings, landscapes, communities, and regions in order to respond to natural and manmade disasters and disturbances. In order to emphasize resilient design, building codes are used to establish a building's quality, safety and energy performance for years to come, because initial design and construction decisions determine operational and maintenance costs for the life of the building. Since the State of Missouri has not established a statewide building code, local governments have the responsibility to establish basic standards for future development.

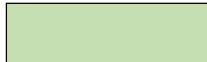
As stated by the Infrastructure RSF in the Mission Scoping Assessment, a potential cause of development in vulnerable places may be that developers, landowners, and local governments may not have the best information on where to build and where it is advisable to build. There is a need for increased resilience and mitigating features including flood protection systems.

### **Goal B.1: Expand Sustainable/Resilient Housing**

**Objective B.1.1: Increase 100 units of sustainable/resilient housing available by January 2022 (this includes CDBG-DR and LIHTC).**

**Strategy B.1.1.1:** Develop trainings, information, and/or guidance on resilient construction and rehabilitation.

**Action B.1.1.1.1:** Work with non-profit partners to research and develop a brochure on federal grants and other funding opportunities to improve housing sustainability/resiliency that would be disseminated through Regional Planning Commissions, Community Action Agencies, University Extensions, and other housing stakeholder organizations.



**Coordinating Agency:** SEMA

**Supporting Partners:** HUD, USDA, FEMA, MHDC, DED, Local Governments, RPCs, CAAs, CHDOs, CDCs, NGOs, Faith-Based Organizations, and Non-profits

**Action B.1.1.1.2:** Research and make available through the State of Missouri Recovery website a list of best practices and sources in other disaster-impacted states that have improved housing resiliency.



**Coordinating Agencies:** SDRC

**Supporting Partner:** HUD, USDA, FEMA, MHDC, DED, and Subject-Matter Experts (SME)

**Action B.1.1.1.3:** Adopt land use agreements and codes that reduce the vulnerability of the housing stock to flooding and other natural disasters.



**Coordinating Agencies:** State, Local Governments, and Municipalities

**Supporting Partner:** State, Local Governments, HUD, USDA, FEMA, USACE, Developers, and Subject-Matter Experts (SME)

**Strategy B.1.1.2:** Reinvest into sustainable/resilient housing.

**Action B.1.1.2.1:** Leverage CDBG-MIT funds, if available to invest in resilient housing.



**Coordinating Agencies:** State

**Supporting Partner:** Consultants, Local Governments, Financial Institutions, and Developers.

**Action B.1.1.2.2:** Leverage the Missouri Department of Natural Resources Division of Energy Low-Income Weatherization Assistance Program (LIAWP).



**Coordinating Agencies:** State, Local Governments, and Municipalities  
**Supporting Partner:** CAAs, Department of Senior Services, and Utility Companies.

**Action B.1.1.2.3:** Ensure housing buy-out programs and redevelopment efforts reduce flooding vulnerabilities through elevation and other successful mitigation principles.



**Coordinating Agencies:** SEMA  
**Supporting Partner:** Local Jurisdictions, Financial Institutions, Developers, and NGOs

**Action B.1.1.2.4:** Work with local HUD CPD office to identify eligible and feasible Section 108 projects.



**Coordinating Agencies:** State and Entitlement Cities and Counties  
**Supporting Partner:** Local Jurisdictions, Financial Institutions, and Developers

**Action B.1.1.2.5:** Leverage HUD Healthy Homes Demonstration Grant Program.

Long-term

**Coordinating Agencies:** HUD Office of Lead Hazard Control and Healthy Homes  
**Supporting Partner:** Not-for profit, for-profit firms located in the United States, state and local governments, federally recognized Indian Tribes and colleges and universities.

**Action B.1.1.2.6:** Leverage CDBG, HOME, and HOPWA to rehabilitate homes addressing health hazards.

Long-term

**Coordinating Agencies:** MHDC/HUD Community Planning and

Development

**Supporting Partner:** Local Governments, Municipalities,

RPCs, CAAs, CHDOs, CDCs, NGOs, Faith-Based

Organizations, and Non-profits

**Action B.1.1.2.7:** Leverage USDA Community Facilities Direct Loan and Grant Program to fund nursing homes or assisted living facilities, transitional housing, and other essential community facilities in rural areas.



**Coordinating Agencies:** USDA

**Supporting Partner:** Local Jurisdictions, Municipalities, Public Bodies,

Community-Based Non-Profit Organizations, and federally recognized

Tribes

**Action B.1.1.2.8:** Leverage historic preservation grants. The Historic Preservation Fund pass-through grants can fund projects that relate directly to the identification, evaluation or protection of historic properties.



**Coordinating Agencies:** Missouri Department of Natural Resources

**Supporting Partner:** DED, Certified Local Governments, all county

governmental entities, municipalities and qualified non-profit

organizations with historic preservation mission.

**Action B.1.1.2.9:** Leverage HUD Rental Assistance Demonstration (RAD) Program.

RAD was created in order to give public housing authorities (PHAs) a powerful tool to preserve and improve public housing properties and address the \$26 billion-dollar nationwide backlog of deferred maintenance. RAD also gives owners of three HUD "legacy" program (Rent Supplement, Rental Assistance Payment, and Section 8 Moderate Rehabilitation) the opportunity to enter into long-term contracts that facilitate the financing of improvements.



**Coordinating Agencies:** PHAs

**Supporting Partner:** HUD, MHDC, Financial Institutions, and

Developers

**Action B.1.1.2.10:** Apply for FEMA Public Assistance Mitigation Grant Section 406 opportunities (cost shared) to fund mitigation measures in conjunction with permanent repairs of disaster-damaged facilities.



**Coordinating Agency:** FEMA

**Supporting Partners:** HUD, State and Local Governments, Developers, and federal Agencies

**Action B.1.1.2.11:** Apply for FEMA Hazard Mitigation Grant Section 404 grant opportunities to provide protection to undamaged parts of a facility or to prevent or reduce damage caused by future disasters or used in conjunction with 406 mitigation funds to bring an entire facility to a higher level of disaster resistance, when only portions of the facility were damaged by the current disaster event.



**Coordinating Agency:** FEMA

**Supporting Partners:** HUD, State and Local Governments, Developers, and federal Agencies

## Recovery Issue C: Increased Mitigation Efforts to Prevent Population Loss

Mitigation is the effort to reduce loss of life and property by lessening the impact of disasters.<sup>12</sup> Well-developed housing mitigation practices will lessen the severity of an event and in turn reduce the number of displaced residents after an event. Consideration for future housing needs during the reconstruction of affected communities should include consideration of potential hazards in the future. As has been observed in other disasters, low numbers of homeowners' and renters with flood insurance will limit resources to recover. In communities with small government or administrative staff, a broader coordination of housing efforts could provide economy of scale to housing production or rehabilitation.

In the Mission Scoping Assessment, the Community Planning and Capacity Building RSF stated that much depends on whether reasonably priced and accessible housing is restored. The erosion of tax base and staff due to loss of property and possible loss of population may have cascading effects on local governments' ability to provide services and rebuild. The Economic RSF found that disruption to roads, railways, and housing have caused displacement of the workforce and interruptions to agribusiness-as-usual operations. Transportation impacts the workforce by disrupting commutes and displacing employees, resulting in population losses and reductions in tax revenue.

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<sup>12</sup> What is Mitigation? <https://www.fema.gov/what-mitigation>

The lack of flood insurance impacts low-income homeowners disproportionately since they normally don't have the savings or means to recover from their losses without assistance. In addition, many of these homeowners may be elderly and/or on a fixed income. To retain population levels educating homeowners and renters on the National Flood Insurance Program may assist to mitigate population loss. Of the 2,221 owners that registered with FEMA, only 27.3% had flood insurance. Moreover, only 2.2% of the renters had flood insurance.<sup>13</sup>

Community disaster preparation plans help mitigate disaster impacts and population losses. As part of the summary of responses from the Whole Community Partner Flood Recovery Meeting on November 25, 2019, the lack of hazard or mitigation plans at the local and county level was recognized as an underlying cause for flood related housing issues. In addition, Multijurisdictional Hazard Plans are a requirement to apply for the annual FEMA Hazard Mitigation Grant Program.

### **Goal C.1: Population Stabilizes and/or Grows**

**Objective C.1.1: Perform education and outreach to maintain units of housing levels in the three most affected counties by addressing transportation, economic, education, housing, etc. to mitigate population loss within Calendar Year 2020.**

**Strategy C.1.1.1:** Provide education and outreach to local communities to prepare and respond resiliently to disasters.

**Action C.1.1.1.1:** FDIC, HUD and MHDC Disaster Affordable Housing Development Summit. federal agencies (FDIC and HUD) and MHDC will be hosting a Disaster Affordable Housing Development Summit in Kansas City, Missouri in March/April 2020. Financial institutions, Community Housing Development Organizations, Community Development Corporations, Housing Counseling Agencies, and local leaders/officials from disaster impacted counties will be invited.

**Coordinating Agency:** FDIC, HUD, and MHDC

**Supporting Partners:** Federal Agencies, State, Local Governments, Municipalities, RPCs, CAAs, Non-profits, and University Extension.

**Action C.1.1.1.2:** Educate local officials and communities on the National Flood Insurance Program.

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<sup>13</sup> FEMA News Release Number: DR-4451-MO NR 065, September 12, 2019; <https://www.fema.gov>

Long-term

**Coordinating Agencies:** FEMA and SEMA

**Supporting Partner:** RPC, CAAs, NGOs, COADs, VOADS, University Extensions, Missouri Department of Insurance, and Local Governments, and Municipalities

**Action C.1.1.1.3:** Educate Jurisdictions about Local Hazard Mitigation Plans - Multijurisdictional Hazard Mitigation Plans.



**Coordinating Agency:** FEMA and SEMA

**Supporting Partners:** Local Governments, Municipalities, and Counties

**Action C.1.1.1.4:** Conduct Public Hearings and Town Hall meetings for local governments and community members.



**Coordinating Agencies:** MHDC/DED

**Supporting Partner:** Local Governments and Municipalities

**Action C.1.1.1.5:** Provide Landlord/Tenant education on affordable housing in a forum to improve understanding, inform about incentives, and recognize landlords.



**Coordinating Agency:** PHAs, RPCs, CAAs, Housing Service Providers, Housing Counseling Agencies, Legal Aid, and Fair Housing.

**Supporting Partners:** MHDC, HUD and USDA

## **Recovery Issue D: Expand Regional Capacity and Funding for Housing Development**

As pointed out by the Community Planning and Capacity Building RSF in the Mission Scoping Assessment, limited local recovery management capability and capacity is a known issue. Missouri communities of all sizes may be overwhelmed with the disaster recovery process and many counties and communities in the state operate almost entirely based on utilizing voluntary or part-time efforts of non-

professional community members to handle administrative roles. In communities with small staff, a broader coordination of housing efforts could provide economy of scale to housing production or rehabilitation.

This lack of capacity also extends to Community Housing Development Organizations (CHDOs), which are private nonprofit, community-based, service organizations that have, or intends to obtain, staff with the capacity to develop affordable housing for the communities they serve. The HOME Investment Partnerships Program (HOME) provides formula grants to states and localities for use by communities - often in partnership with local nonprofit groups - to fund a wide range of activities including building, buying, and/or rehabilitating affordable housing for rent or homeownership or providing direct rental assistance to low-income people. At least 15 percent of a HOME participating jurisdiction's (PJ's) annual allocation must be set aside for affordable housing activities to be undertaken by CHDOs. It is the largest federal block grant to state and local governments designed exclusively to create affordable housing for low-income households.<sup>14</sup> According to HOME Formula Allocations on the HUD Exchange website, the HOME funding for the State of Missouri was \$16,129,626 in 2009 and is \$11,527,796 in 2019. This represents a 28.53% decrease in HOME funding in the last 10 years not counting inflation.

### **Goal D.1: Increase Regional Capacity and Funding for Housing**

**Objective D.1.1: Perform three elected-official visits annually to inform local government officials on housing and community development programs and explain the partnership relationships of RPCs, CAAs, and other Housing Providers; promote regional and state cooperative relationships.**

**Strategy D.1.1.1:** Partner with housing organizations, non-profits, business community, philanthropic organizations, foundations, and local, state, and federal government agencies to build capacity and funding streams.

**Action D.1.1.1.1:** Make sure all the right players are at the table, including Community Action Agencies, Regional Planning Commissions, Habitat for Humanity, Public Housing Authorities, Academic community and Universities, Realtors, Developers, Housing Counseling Agencies, Hospital and Mental Health agencies, Transportation partners, and other housing stakeholders.

**Coordinating Agency:** State and Local Governments  
**Supporting Partners:** Federal Agencies, Municipal League, RPCs, CAAs, Non-profits, Faith-based Organizations, and University Extension.

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<sup>14</sup> HOME Investment Partnerships Program, <https://www.hudexchange.info/programs/home/>

**Action D.1.1.1.2:** Educate local government officials through tutorials or trainings by non-profits and/or consultants that would assist in identifying financial resources to close funding gaps. Advertise tutorials or trainings on Disaster Recovery website.



**Coordinating Agency:** SDRC and Local Governments

**Supporting Partners:** Federal Agencies, Municipal League, RPCs, CAAs, Non-profits, Faith-based Organizations, and University Extension.

**Action D.1.1.1.3:** Educate local government officials on the process to fund projects. Advertise on the Disaster Recovery website.



**Coordinating Agency:** SDRC and Local Governments

**Supporting Partners:** Federal Agencies, Municipal League, RPCs, CAAs, Non- profits, Faith-based Organizations, and University Extension.

**Action D.1.1.1.4:** Identify POC and create a website and outreach plan for educational/marketing material for use by local government leaders/officials to make sure knowledge is shared (succession planning).



**Coordinating Agencies:** Missouri Association of Counties

**Supporting Partner:** Federal Agencies, Municipal League, RPCs, CAAs, Non- profits, Faith-Based Organizations, and University Extension

**Action D.1.1.1.5:** Establish and implement an MOU or agreement with partners to foster commitment to a regional housing approach and identify cost-effective solutions to solve housing issues. Ensure data sharing or transfer at a regional level.

Long-term

**Coordinating Agencies:** Local and Regional Jurisdictions

**Supporting Partner:** Federal Agencies, Municipal League, RPCs, CAAs, Non- profits, Faith-Based Organizations, and University Extension

**Action D.1.1.1.6:** When opportunities exist, high-capacity housing organizations should foster partner relationships with low-capacity housing organizations to increase capacity to develop affordable housing. Implement this action through a virtual webinar that

spotlights the benefits of this relationship, provides affordable housing best practices, and gives examples of successful partnerships.



**Coordinating Agency:** Local and Regional Jurisdictions

**Supporting Partners:** Federal Agencies, Municipal League, RPCs, CAAs, Non-profits, Faith-Based Organizations, and University Extension

**Strategy D.1.1.2:** Increase capacity to develop affordable housing by taking advantage of federal, state, and non-profit programs, trainings and technical assistance.

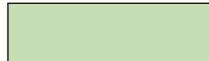
**Action D.1.1.2.1:** HUD Kansas City, Kansas Regional Office and HUD St. Louis Field Office offer a grant writing workshop to non-profits, faith-based organizations, and other housing entities in the affordable housing space.



**Coordinating Agency:** HUD

**Supporting Partners:** Federal Agencies, State, RPCs, CAAs, Non-profits, NGOs, Faith-Based Organizations, and University Extension

**Action D.1.1.2.2:** Utilize HUD's Distressed Cities Technical Assistance program for eligible small community capacity building.



**Coordinating Agency:** HUD

**Supporting Partners:** Federal Agencies, State, RPCs, CAAs, Non-profits, NGOs, Faith-Based Organizations, and University Extension

**Action D.1.1.2.3:** Research and make available through the State of Missouri Recovery website a list of best practices and sources in other disaster-impacted states that have improved housing resiliency.



**Coordinating Agency:** SDRC

**Supporting Partners:** State and Local Governments

**Action D.1.1.2.4:** FDIC, HUD and MHDC Disaster Affordable Housing Development Summit. Federal agencies (FDIC and HUD) and MHDC will be hosting a Disaster Affordable Housing Development Summit in Kansas City, Missouri in March/April 2020. Financial institutions, Community Housing Development Organizations, Community Development Corporations, Housing Counseling Agencies, and local leaders/officials from disaster impacted counties will be invited.



**Coordinating Agency:** FDIC, HUD, FEMA, and MHDC  
**Supporting Partners:** Federal Agencies, State, Local Governments, Municipalities, RPCs, CAAs, Non-profits, and University Extension

**Action D.1.1.2.5:** Leverage HUD Section 4 Program--Capacity Building for Affordable Housing and Community Development Program. The program enhances the capacity and ability of community development corporations (CDCs) and community housing development organizations (CHDOs) to carry out community development and affordable housing activities that benefit low-income persons.



**Coordinating Agencies:** HUD  
**Supporting Partner:** State, Local Governments, RPCs, CAAs, Non-profits, Faith-Based Organizations, and University Extension

**Note:**

*Below is additional housing information for the State of Missouri for consideration in recovery planning. See the Housing Impact Assessment and Mission Scoping Assessment for additional information.*

**HUD Community Development Block Grant (CDBG)-Disaster Recovery (DR)**

On December 3, 2019, the U.S. Department of Housing and Urban Development published the following information:

**TABLE 3: HUD COMMUNITY DEVELOPMENT BLOCK GRANT-DISASTER RECOVERY**

2019 Disaster					
FEMA Disaster Number	Grantee	Prior Allocation	This Announcement	Total All Allocations	Minimum amount that must be expended for recovery in the HUD-identified “most impacted and distressed” areas
<b>4451</b>	State of Missouri	\$0	\$30,776,000	\$30,776,000	(No less than \$24,621,000) St. Charles County; 64437 (Holt) and 65101 (Cole) Zip Codes.
Source: Federal Register /Vol. 85, No. 17 /Monday, January 27, 2020 /Notices; <a href="https://forum.ltgoft.net/articles/housing/4266-hud-continues-support-for-fifteen-states-and-four-u-s-territories-recovering-from-major-disasters">https://forum.ltgoft.net/articles/housing/4266-hud-continues-support-for-fifteen-states-and-four-u-s-territories-recovering-from-major-disasters</a>					

CDBG-DR grants support a variety of disaster recovery activities, including housing redevelopment and rebuilding, business assistance, economic revitalization, and infrastructure repair. Grantees are required to spend the majority of these recovery funds in “most impacted” areas as identified by HUD. HUD will issue administrative guidelines shortly for use of the funds to address grantees’ long-term recovery needs, particularly in the area of housing recovery. The CDBG-DR Program requires grantees to develop thoughtful recovery plans informed by local residents.

### **Individual Housing Assistance**

As Table 3 indicates, as of November 5, 2019, 3,002 residents in the 26 declared counties have applied for FEMA assistance. Of these registrants, 2,221 (74%) were homeowners and 733 (24%) were renters. There were 48 registrants whose housing occupancy (owner vs. renter) was not provided.

**TABLE 4: POPULATION, POVERTY, AND POTENTIALLY VULNERABLE GROUPS (OWNERS AND RENTERS)**

County	Total population	People below Poverty Level	Owners			Renters			Renter Tenure Blank	
			Owner Registrants	HH with Member 60+	Owner HH with AFN Member	Renter Registrants	HH with Member 60+3	HH with AFN Member		
Andrew	17,607	9.0%	129	52	14	13	3	2	5	
Atchison	5,171	12.0%	49	26	10	13	2	0		
Boone	180,005	19.0%	10	5	3	8	2	0		
Buchanan	88,571	17.0%	92	48	10	21	7	3	1	
Callaway	44,889	12.0%	19	10	4	3	0	0	2	
Carroll	8,743	18.0%	65	28	2	19	4	0	4	
Chaniton	7,451	14.0%	73	40	11	10	2	2	7	
Cole	76,796	13.0%	221	87	26	254	19	39	8	
Greene	291,923	19.0%	70	38	12	4	0	0		
Holt	4,404	12.0%	214	110	22	69	29	12	6	
Jackson	700,307	16.0%	133	46	23	31	6	7	1	
Jasper	120,636	17.0%	149	56	9	8	1	0	1	
Jefferson	224,347	11.0%	17	6	0	4	1	1		
Lafayette	32,598	13.0%	14	11	4	1	1	0		
Lewis	9,855	15.0%	16	4	2	1	0	0		
Lincoln	57,686	13.0%	116	54	13	44	6	6	5	
Livingston	15,146	18.0%	25	11	2	3	1	0		
McDonald	23,078	19.0%	78	29	13	12	1	0	1	
Miller	25,336	17.0%	82	35	11	74	25	22		
Newton	58,266	13.0%	61	26	8	26	3	2		
Osage	13,714	7.0%	17	8	2	1	0	0		
Pike	18,504	15.0%	70	42	4	20	5	4		
Platte	102,985	7.0%	17	6	1	2	0	0		
Pulaski	52,014	13.0%	20	9	5					
Saline	22,895	17.0%	456	195	57	92	10	6	7	
St. Charles	399,182	6.0%	8	7	1					
Totals	2,602,109		2,221	989	269	733	128	106	48	

Source: Census Bureau 2018 Population Estimates; 2017 ACS 5-year data; FEMA IA Data (FIDA 21196)

Registrant information was analyzed to categorize the impacts based on owner and renter registrant FVL. Using the FEMA data, owners and renters were characterized into five categories, as shown below in Table 5. For owners, the categories and criteria are:

- Minor-low      Less than \$3,000 in RP FVL
- Minor-high     Between \$3,000 and \$7,999 in RP FVL
- Major-low     Between \$8,000 and \$14,999 in RP FVL or 1-4 feet of 1st floor flooding
- Major-high    Between \$15,000 and \$28,800 in RP FVL or 4-6 feet of 1st floor flooding
- Severe           Over \$28,800 in RP FVL, destroyed, or over 6 feet of 1st floor flooding

For renters, the categories are the same and the criteria are:

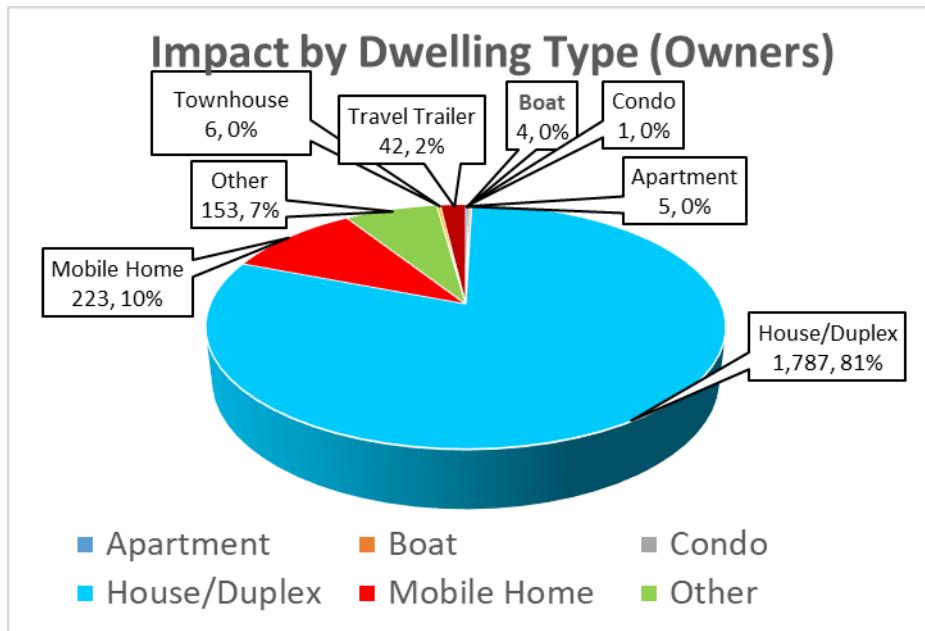
- Minor-low Less than \$1,000 in PP FVL
- Minor-high Between \$1,000 and \$1,999 in PP FVL
- Major-low Between \$2,000 and \$3,499 in PP FVL or 1-4 feet of 1st floor flooding
- Major-high Between \$3,500 and \$7,499 in PP FVL or 4-6 feet of 1st floor flooding
- Severe Over \$7,500 in PP FVL, destroyed, or over 6 feet of 1st floor flooding

**TABLE 5: IMPACT BY DWELLING TYPE AND FVL DAMAGE CATEGORY**

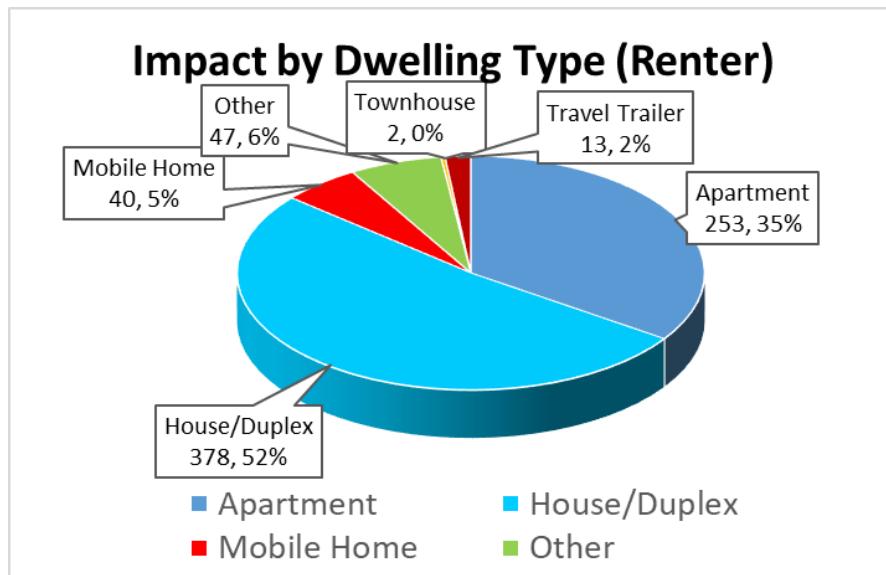
Dwelling	None	OWNERS						RENTERS						
		Minor Low	Minor High	Major Low	Major High	Severe	Total	None	Minor Low	Minor High	Major Low	Major High	Severe	Total
<b>Apartment</b>		3		2			5	149	30	14	24	29	7	253
<b>Boat</b>	3	1					4							
<b>College Dorm</b>														
<b>Condo</b>		1					1							
<b>House/Duplex</b>	605	480	145	198	236	123	1,787	178	57	21	47	54	21	378
<b>Military Housing</b>														
<b>Mobile Home</b>	62	81	25	21	19	15	223	28	4		2	3	3	40
<b>Other</b>	153						153	41	1		3	2		47
<b>Townhouse</b>	5					1	6	1		1				2
<b>Travel Trailer</b>	10	12	5	11	1	3	42	7	2	2	2			13
<b>Total</b>	<b>838</b>	<b>578</b>	<b>175</b>	<b>232</b>	<b>256</b>	<b>142</b>	<b>2,221</b>	<b>404</b>	<b>94</b>	<b>38</b>	<b>78</b>	<b>88</b>	<b>31</b>	<b>733</b>

Source: FEMA IA Data, as of November 5, 2019 (FIDA 21196)

**FIGURE 4: IMPACT BY DWELLING TYPE (OWNERS)**



**FIGURE 5: IMPACT BY DWELLING TYPE (RENTERS)**



To estimate the most impact, the three highest levels (major low, major high, and severe) were identified for both owners and renters. They were then aggregated, allowing the counties (and zip codes) to be ranked. Statewide, there were 826 registrants with damage in the top three FVL categories (major low, major high, and severe). This analysis shows six (of the 26) counties with 75% (616 of 826) of the State's damage, as shown in Table 6.

**TABLE 6: SIX MOST IMPACTED COUNTIES RANKED BY TOP THREE FVL CATEGORIES BASED ON DAMAGE (MAJOR-LOW, MAJOR-HIGH, AND SEVERE), OWNERS AND RENTERS**

OWNERS						RENTERS					
Six Counties	Major Low	Major High	Severe	Top 3 Categories	County Total All Damage Categories	County	Major Low	Major High	Severe	Top 3 Categories	County Total All Damage Categories
St. Charles	63	78	94	235	348	Cole	19	13	12	44	94
Holt	27	24	18	69	108	St. Charles	13	12	12	37	48
Lincoln	14	36	15	65	92	Holt	8	24	1	33	37
Buchanan	21	11	5	37	73	Lincoln	3	4	5	12	21
Jackson	9	17	6	32	83	Miller	4	4	4	12	30
Cole	5	4	19	28	85	Newton	5	6	1	12	18
Six County Subtotal	466					Six County Subtotal	150				

Source: FIDA 34761 as of November 5, 2019

Of the IA declared counties for DR-4551, there were 18 counties with fewer than 25 registrants (owners and renters combined) that experienced damage in the top three FVL categories based on damage. The other eight counties indicate the “concentration of damage” often seen in disasters, as some areas are particularly hard hit. Examining the impacts at the zip code level also shows the concentration, with the 10 most impacted zip codes having 70% of Missouri’s registrants in the top three FVL categories based on damage. Those 10 zip codes are shown in Table 7.

**TABLE 7: TEN MOST IMPACTED ZIP CODES RANKED BY TOP THREE CATEGORIES BASED ON DAMAGE (MAJOR-LOW, MAJOR-HIGH, AND SEVERE), OWNERS AND RENTERS**

OWNERS						RENTERS							
Zip	County	Major Low	Major High	Severe	Top 3 Categories	Zip	County	Major Low	Major High	Severe	Top 3 Categories		
63386	St. Charles	23	40	41	104	104	65101	Callaway/Cole	18	13	9	40	40
63301	St. Charles	14	21	43	78	78	64470	Buchanan/Holt	6	20	0	26	26
64437	Holt	25	24	17	66	66	63373	St. Charles	8	4	3	15	15
63373	St. Charles	25	12	8	45	45	63386	St. Charles	5	4	5	14	14
63389	Lincoln	3	18	8	29	29	65026	Miller	4	4	4	12	12
64484	Buchanan	15	9	5	29	29	64850	McDonald/Newt	4	6	1	11	11
63347	Lincoln	8	15	2	25	25	63389	Lincoln	2	3	3	8	8
64831	McDonald	9	11	2	22	22	63301	St. Charles	0	4	3	7	7
65101	Callaway/Cole	7	4	7	18	18	64437	Holt	1	4	1	6	6
63330	Pike	5	7	4	16	16	64831	McDonald	3	2	1	6	6
Ten Zip Code Total						145							

Source: FIDA 34761 as of November 5, 2019



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## **Infrastructure Systems Recovery**

This section summarizes key findings impacting Infrastructure and defines recovery issues, goals, objectives and strategies for the Infrastructure Systems (IS) Recovery Support Function (RSF).

The major river flooding and tornadoes that occurred in DR-4435 and DR-4451 resulted in widespread closure and disruption of transportation routes, public drinking water systems, wastewater treatment facilities, power generation facilities, barge transportation, and railway routes.

INFRASTRUCTURE SYSTEMS PARTNERS	
COORDINATING AGENCIES	
U.S. Army Corps of Engineers (USACE)	
Missouri Department of Transportation (MODOT)	
PRIMARY AGENCIES	
U.S. Dept. of Homeland Security (DHS)	
Federal Emergency Management Agency (FEMA) *	
U.S. Dept. of Transportation (DOT) *	
U.S. Dept. of Energy (DOE)	
SUPPORTING AGENCIES	
U.S. Department of Health and Human Services (HHS)	
U.S. Dept. of Commerce (DOC)	
U.S. Environmental Protection Agency (EPA) *	
U.S. Department of the Interior (DOI)	
U.S. Department of Agriculture (USDA)	
U.S. Dept. of the Treasury	
Department of Defense (DOD)	
U.S. Dept. of Education (ED)	
Delta Regional Authority (DRA)	
General Services Administration (GSA)	
Dept. of Housing and Urban Development (HUD)	
Federal Communications Commission (FCC)	
Delta Regional Authority (DRA)	
United States Geological Survey (USGS)	

The challenges to the State of Missouri and its citizens were compounded by the repetitive nature of flood inundation in communities where recovery has not been fulfilled from previous disasters. The State of Missouri has taken a bold step to delegate state agency specialists who have worked closely with the Interagency Recovery Coordination team in identifying disaster issues and developing strategies to address challenges in communities and agencies across the state. Damage to transportation systems occurred in at least 90 of 114 counties in Missouri, with MoDOT reporting nearly 470 independent road closures. Significant damage and extended inundation have resulted in large scale damage to roadways resulting in closures along major transportation routes and disruption of local and regional economies. These disruptions also presented challenges to emergency responders and for repairs following floodwater recession.

As of June 2019, 18 communities had reported sustained flood damage to their drinking water systems,

and a total of 52 Missouri communities reported flood impacts to their wastewater treatment facilities (DNR pub 2753 06/2019). There are 5 communities that experienced damage to both their drinking water systems and wastewater facilities.

Infrastructure systems are circulatory systems vital to building and sustaining a strong nation. They connect people, communities, food systems, commerce and emergency services. Repetitive damage have caused the need for a more comprehensive strategic look at our infrastructure systems in areas vulnerable to impacts from inundation. Site specific improvements to reduce flood risk are needed as well as a more regional perspective to develop service redundancies and alternatives for these vulnerable facilities.

The recommendations recognize a lack of resources at local levels and the inability of individual communities to address issues arising from major river flooding. Through the Recovery Support Strategy development process, we have identified strategies to address these issues.

However, it must be acknowledged that without a regional approach and assistance to communities, the chance of achieving success across the entire state is substantially reduced. A regional approach will allow for a more concerted and collective effort to identify the most vital infrastructure projects and to increase the ability to leverage available resources.



## Key Findings

The federal Infrastructure RSF identifies and integrates the efforts and capabilities of the federal government to support local, state, tribal, territorial infrastructure owners, operators, and authorities within and across jurisdictions to expedite recovery by efficiently restoring infrastructure systems and services while incorporating risk reduction measures to improve resiliency and sustainability. Similarly, Missouri has appointed a State Infrastructure RSF coordinator. The mission of the State Infrastructure RSF is to coordinate and integrate the capabilities of state, local, private sector and nonprofit partners for recovery of natural, cultural and historic sites and interests. The lead agency coordinating recovery efforts for the Infrastructure RSF is the Missouri Department of Transportation.

Working collaboratively, the state-federal Infrastructure RSFs identified key findings across several areas having significant issues as a result of the disaster and together, have developed specific, measurable, achievable, realistic and time-bound objectives to address these issues. Strategies have been outlined with deliberate actions that the state, along with federal, local and private partners, can take to address disaster issues. The state is positioned to reach many of the sectors involved in infrastructure and development,

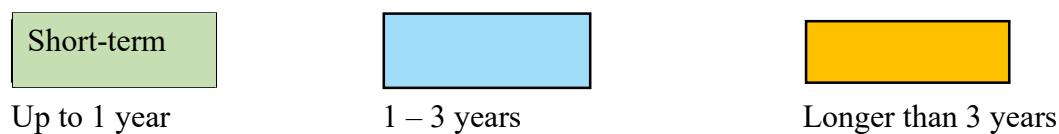
and of existing functions that can be utilized to address many of the objectives.

The state and federal Infrastructure RSFs identified multiple issues and sub-issues affecting the state of Missouri:

- A. Flood protection systems are vulnerable
- B. Unmitigated infrastructure impacts
  - B.a. Need for increased transportation resiliency and continuity of operations (road, rail, air and water).
  - B.b. Water supply and wastewater facilities are vulnerable to damage, and experience loss of service.
  - B.c. Damage to stormwater infrastructure in watersheds and contributing tributaries.
  - B.d. Threats to reliable electric supply and distribution during disasters.
- C. Need for broader river and water management

Federal, state and local partners developed the following goals, objectives, strategies and actions to address these findings. The timeframes for actions are defined as follows:

## Recovery Actions – Time Frame Definition



### Recovery Issue A. Flood Protection Systems are Vulnerable

During 2019 both the Mississippi and the Missouri rivers were above flood stage for longer periods of time than during the historic 1993 flood event. This flooding of the country's two largest river systems resulted in devastation across Missouri. The extended flooding and high levels of inundation resulted in damage to flood protection systems across the state, leaving the infrastructure they protect exposed and vulnerable.



As of January 2020, USACE has received 96 requests for repair assistance from flood protection systems in the Kansas City District, 13 requests in the St. Louis District, and 8 requests in the Rock Island District. These systems protect a wide range of infrastructure from public utilities and large expanses of agricultural lands to commercial and private buildings. Federal and non-federal systems are operated and maintained by local levee districts. To remain eligible for assistance through the USACE's PL84-99 Rehabilitation and Inspection Program (RIP) they are required to meet USACE's set levee safety standards.

Figure 1: Elsberry Levee District overtopping May 2019.  
Source: USACE-MVS Flood Fight Team.

Different cost -share opportunities are available to these two types to complete repairs if determined to be economically viable. Federal systems can receive 100% federal assistance for the completion of repairs and non-federal systems can receive 80% federal assistance. All systems are responsible for securing the needed borrow material for necessary repairs.

In addition, there are a number of private levees across Missouri that are not well documented, and for which damage status is unknown. Often their protection levels and impacts to other infrastructure are not precisely understood. These private systems are not currently eligible for USACE PL84-99 assistance. Issues such as not having a legal designation can make securing assistance resources difficult. These systems often protect agricultural lands and completion of repairs of to the flood protection systems is necessary to maintain certain crop insurance protections.

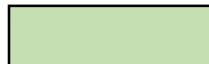
This issue directly addresses the functionality and effectiveness of flood management systems, which provide protection for various public and private interests. Furthermore, management of the river system as a whole cannot occur unless the designations and status of flood management systems are known, and stakeholders have the knowledge and ability to do repairs and maintenance.

**Goal A.1. Determine relationship of all flood protection measures (federal, non-federal, private) within a system and the level of protection provided by each.**

**Objective A.1.1. Produce thorough analysis of all the components within Missouri flood protection systems.**

**Strategy A.1.1.1.** Create an inventory of Missouri levee systems and incorporate collected data into the National Levee Database (NLD).

**Action A.1.1.1.1.** Compile current data and gather needed survey data of flood protection systems.



**Coordinating Agency:** USACE

**Supporting Partners:** SEMA and Levee Districts

**Strategy A.1.1.2.** Identify the lowest level of protection provided by each of the segments that comprise the flood protection system.

**Action A.1.1.2.1.** Perform community mapping exercises and complete review of existing geospatial data.



**Coordinating Agency:** SEMA, USACE

**Supporting Partners:** Technical Schools, MU Extension Offices, Levee Districts, Regional Planning Commissions

**Objective A.1.2.** Improve large river water control plans by incorporating private, local, state, and federal infrastructure in river and floodplains.

**Strategy A.1.2.1.** Identify and utilize mapping and analysis systems.

**Action A.1.2.1.1.** Utilize levee data (gathered as a recommended strategy above) to better inform water control planning to more accurately capture overtopping elevations and flood storage behind levees once overtopped.

Long-term

**Coordinating Agency:** USACE

**Supporting Partners:** SEMA

**Objective A.1.3.** Ensure effective outreach, communication, and education to affected communities regarding flood protection system functionality.

**Strategy A.1.3.1.** Utilize local workshops and meeting forums to provide information to citizens.

**Action A.1.3.1.1.** Federal, state and local officials coordinate to implement outreach programs.

**Coordinating Agency:** SEMA and USACE

**Supporting Partners:** MU Extension Office, RPCs, non-profits

**Action A.1.3.1.2.** Build capacity and develop flood protection systems organizations that are capable of applying for and receiving funding and technical assistance (e.g. levee districts).

**Coordinating Agency:** SEMA and USACE

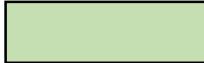
**Supporting Partners:** MU Extension Office, Missouri Dept. of Economic Development, RPCs, Levee Districts, non-profits.

**Goal A.2. Reduce vulnerabilities of existing flood protection systems.**

**Objective A.2.1. Flood protection systems are restored to a level that allows continued participation in protective programs (e.g. crop insurance, PA Cat. A and B, USACE PL84-99) quickly after an event.**

**Strategy A.2.1.1.** Provide assistance to entities that did not receive federal assistance through the PL84-99 program (inactive systems, private systems, and active programs participants with needed repair projects that were not economically justified by USACE).

**Action A.2.1.1.1.** Expand the State appropriated cost-share, currently available to non-federal systems, to include systems that are not receiving federal funding through the PL84-99 Program.

  
**Coordinating Agency:** Missouri Legislature / SEMA  
**Supporting Partners:** USACE, NRCS, SEMA

**Action A.2.1.1.2.** For systems where flood protection systems are critical to maintaining rail service, facilitate conversations between interested parties to develop private sector solutions to complete repairs and restore levels of protection.

  
**Coordinating Agency:** USACE and SEMA  
**Supporting Partners:** Missouri Railroad Association (MRRA)

**Strategy A.2.1.2.** Identify existing engineering capacities within the region and resources that could be leveraged to support recovery.

**Action A.2.1.2.1.** Create pre-identified support lists of Professional Engineers available to provide repair recommendations and certify repairs.

  
**Coordinating Agency:** USDA-Risk Assessment  
**Supporting Partners:** Regional USDA offices

**Objective A.2.2. Expedite USACE PL84-99 repair process for economically justified projects to support continued participation in protective programs.**

**Strategy A.2.2.1.** Expand use of pre-disaster preparations to support streamlined recovery functions.

**Actions A.2.2.1.1.** Develop pre-disaster streamlining functions for contracting repair work.



**Coordinating Agency:** USACE

**Supporting Partners:** SEMA, FEMA

**Action A.2.2.1.2.** Expand use of predetermined borrow sites to reduce Federal review times.



**Coordinating Agency:** USACE

**Supporting Partners:** SEMA, MU Extension Office, USDA, Levee Districts

### **Goal A.3. Increase resiliency of existing flood protection systems.**

**Objective A.3.1. Increase participation in Corps of Engineers PL84-99 Program, opening opportunities to leverage federal assistance in the future.**

**Strategy A.3.1.1.** Work with USACE to identify and prioritize inactive flood management systems. Determine those systems that are interested in gaining active status in PL84- 99 Program.

**Action A.3.1.1.1.** Involve interested parties in assessment and PL84-99 reintegration processes.



**Coordinating Agency:** USACE

**Supporting Partners:** SEMA, MU Extension Office, Levee Districts

**Action A.3.1.1.2.** Investigate and utilize state and private funding options to assist in the correction of deficiencies preventing the system from being active.



**Coordinating Agency:** SEMA, USACE

**Supporting Partners:** MRRA, NRCS, MU Extension

**Objective A.3.2. Prevent and/or reduce damage from overtopping of flood protection systems.**

**Strategy A.3.2.1.** Outreach to potential stakeholders in the flood protection system to discuss damage mitigating projects.

**Action A.3.2.1.1.** Research and identify flood protection systems (federal, non-federal, private, and unmaintained) that are receptive to changes that will reduce overtopping damage.



**Coordinating Agency:** USACE

**Supporting Partners:** SEMA

**Strategy A.3.2.2.** Identify and engineer "betterments" to reduce potential future damage at willing flood protection systems (cost of betterment is responsibility of the system).

**Action A.3.2.2.1.** Construct damage mitigation measures (e.g. controlled overtopping structures) at flood protection systems, especially those with lower levels of protection.



**Coordinating Agency:** USACE

**Supporting Partners:** SEMA and Levee Districts

## **Recovery Issue B: Unmitigated Infrastructure impacts.**

### **Recovery Issue B.a. Unmitigated infrastructure impacts - Need for increased transportation resiliency and continuity of operations (road, rail, air and water).**

Spring flooding of the Missouri and Mississippi rivers, along with major flooding in areas across the state, and multiple tornados resulted in significant impacts across transportation systems in Missouri. Transportation infrastructure damage occurred in at least 90 Missouri counties, with early damage estimates reported at \$383,329,126 for all modes, including air, water, rail and road. Damage to the highway system took many forms, including washed out bridge approaches, severe undermining and scouring around abutments and piers, numerous washed out roadway sections, extensive road surface damage, extensive shoulder damage and large amounts of debris.

Unmitigated infrastructure impacts include damage to roads, railroads and low water crossings (which present major public safety issues). Road damage led to the closure of I-29, and several other important roads across the state. A potential issue identified by state and federal RSF partners, includes the need for coordinated transportation studies, repairs and projects between the Federal Highways Administration

(FHWA), state and local areas. State roads are the state's responsibility, while county roads are the county's responsibility. Road and railroad features often form a de facto levee or berm that directs runoff and floodplain inundation.



Figure 2: US 159 Bridge near Fortescue, Missouri.

of flooding in many areas, the prolonged duration of inundation, and forecasts of increasing water levels.

**Goal B.a.1. Vulnerabilities are eliminated or reduced to allow transportation systems to remain intact or able to quickly regain function.**

**Objective B.a.1.1. Develop engineering solutions to mitigate or reduce damage based upon types of hazards.**

**Strategy B.a.1.1.1.** Identify and inventory routes and structures with repetitive damage and the character of the damage.

**Action B.a.1.1.1.1.** Implement engineering solutions to mitigate or harden infrastructure and minimize damage. This action is expected to be initiated in the intermediate recovery phase and be continued and completed in the long-term phase.

Long-term

**Coordinating Agency:** MoDOT, FHWA, FEMA

**Supporting Partners:** Local Governments, Regional Planning Commissions

**Action B.a.1.1.1.2.** Investigate and determine funding streams to improve repeatedly damaged structures.



**Coordinating Agency:** MoDOT / MO Dept. of Economic Development  
**Supporting Partners:** Local Governments and Regional Planning Commissions, state Universities

**Goal B.a.2. Transportation systems are operational quickly after damage from inundation.**

**Objective B.a.2.1. Put in place mechanisms and processes that will support quick restoration of transportation routes following flooding.**

**Strategy B.a.2.1.1.** Review and identify current contracts, contracting gaps, and contracting opportunities.

**Action B.a.2.1.1.1.** Pre-identify contractor capability, cost assessments, and MOUs.



**Coordinating Agency:** MoDOT and FHWA  
**Supporting Partners:** Local Governments and Regional Planning Commissions

**Action B.a.2.1.1.2.** Develop statewide debris management plans and procedures.



**Coordinating Agency:** MoDOT, SEMA, MDNR  
**Supporting Partners:** Local Governments and Regional Planning Commissions

**Goal B.a.3. State and community integrated plans incorporating transportation resiliency are in place.**

**Objective B.a.3.1. Review, establish, and complete necessary preparation of flood detour routes and procedures.**

**Strategy B.a.3.1.1.** Identify frequently inundated routes and develop alternate routes.

**Action B.a.3.1.1.1.** Execute memorandums of agreements between MoDOT and local governments regarding routes and procedures.



**Coordinating Agency:** MoDOT, SEMA, FHWA

**Supporting Partners:** Local Governments and Regional Planning Commissions

**Action B.a.3.1.1.2.** Pre-determine traffic control requirements for bypass routes.



**Coordinating Agency:** MoDOT, SEMA, FHWA

**Supporting Partners:** Local Governments and Regional Planning Commissions

**Action B.a.3.1.1.3.** Pre-establish bypass routes based upon weight capacity and traffic volumes.



**Coordinating Agency:** MoDOT, SEMA, FHWA

**Supporting Partners:** Local Governments and Regional Planning Commissions

**Action B.a.3.1.1.4.** Engineer bypass routes to handle additional traffic volumes.

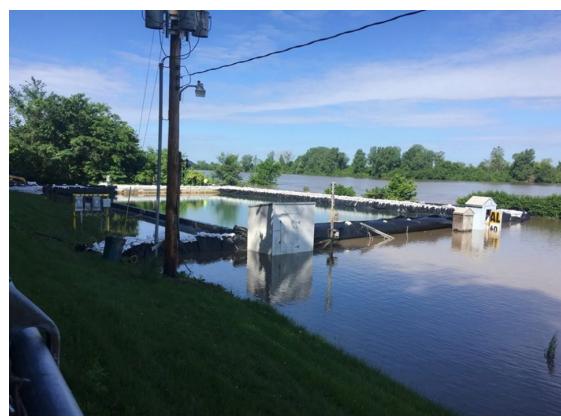


**Coordinating Agency:** MoDOT, SEMA, FHWA

**Supporting Partners:** Local Governments and Regional Planning Commissions

## **Recovery Issue B.b. Unmitigated infrastructure impacts - Water supply and wastewater facilities are vulnerable to damage and experience loss of service.**

Public utilities with infrastructure located within floodplains were impacted with some incurring prolonged and continuing inundation. According to the 2018 Missouri River Water Control Plan, the Missouri River supplies water for over 2,250,240 residents in Missouri. Both water supply and wastewater facilities can suffer minor damage from a disaster event and yet, continue operations; while some experience major damage that shut down the system. Typical damage impacting these systems include access road inundation and plant damage to mechanical and electrical features, intake and outlet



*Figure 3: Lexington Missouri water supply treatment facility*

distribution lines, electrical supply, and structural damage. Damage such as these can cause loss of function and thereby, loss of services resulting in environmental impacts and negative health within the community. Flooding impacts to localized utilities has far-reaching impacts that extend outside floodplains to other communities reliant on these vital systems.

The 2019 floods threatened hazardous waste management facilities and solid waste sites which can contaminate river water. Protecting essential public utilities, enabling them to continue operations during a flood event, and getting back online quickly after, is critical to enhancing resilience and reducing risk. This is vital for allowing residents to stay comfortably in their homes and for businesses to continue operations; it also presents challenges for local governance and community sustainability.

**Goal B.b.1. Vulnerabilities are eliminated, and water systems remain intact and functional.**

**Objective B.b.1.1. Identification of system components most vulnerable to inundation.**

**Strategy B.b.1.1.1.** Review historic and repetitive damage within facilities' or systems' design.

**Action B.b.1.1.1.1.** Internal review at utility level to determine components most vulnerable to inundation. Information shared to planning levels of organization.



**Coordinating Agency:** MDNR, EPA

**Supporting Partners:** Missouri Public Utility Alliance (PUA), Missouri Rural Water Association (MRWA), Regional Planning Commissions, Local Utility, SEMA

**Objective B.b.1.2. Flood-proof vulnerable system components by encouraging site modifications (resiliency).**

**Strategy B.b.1.2.1.** Investigate engineering solutions to determine most appropriate flood-proofing solutions such as: elevating components above flood zone, adding berms to existing infrastructure sites, etc.

**Action B.b.1.2.1.1.** Utilities use technical assistance offered through state programs and other grant programs to complete analysis of flood-proofing solutions.



**Coordinating Agency:** MDNR, USACE

**Supporting Partners:** Missouri Public Utility Alliance (PUA), Missouri Rural Water Association (MRWA), Regional Planning Commissions, Local Utility, SEMA

**Strategy B.b.1.2.2.** Ensure that facilities will be accessible during operation.

**Action B.b.1.2.2.1.** Within regulatory interactions, promote site modifications and problem-solving assistance.



**Coordinating Agency:** MDNR

**Supporting Partners:** MPUA, MRWA, Regional Planning Commissions, Local Utility

**Strategy B.b.1.2.3.** Wellhead coverings to prevent water contamination in backflow (upstream wastewater may threaten downstream drinking water).

**Action B.b.1.2.3.1.** Encourage municipalities to invest in flood-proofing infrastructure at their wellheads in flood zones.



**Coordinating Agency:** MDNR

**Supporting Partners:** SEMA, MPUA, MRWA, Regional Planning Commissions, Local Utility, MU Extension

### **Goal B.b.2. Increase systems resiliency and continuity of operations.**

**Objective B.b.2.1. Increase service redundancies and assure continuity of operations and emergency plans in place.**

**Strategy B.b.2.1.1.** During regulatory inspection processes, MDNR should inquire into disaster preparedness plans and COOP. MDNR should also promote these values and investigate funding programs to support providing training.

**Action B.b.2.1.1.1.** Review and modify as appropriate MDNR water and wastewater inspection checklist to include these discussions.



**Coordinating Agency:** MDNR and USACE

**Supporting Partners:** MPUA, MRWA, Regional Planning Commissions, Local Utilities

**Strategy B.b.2.1.2.** Identify systems that do not have redundant services during regulatory interactions and promote system regionalization for those lacking backup measures.

**Actions B.b.2.1.2.1.** Identify communities with capacity to develop backup systems.

Short-term

**Coordinating Agency:** MDNR and MO Dept. of Economic Development

**Supporting Partners:** MPUA, MRWA, USDA, Regional Planning Commissions, Local Utilities

**Action B.b.2.1.2.2.** Complete strategic planning to assist utilities that have vulnerabilities and lack redundancy in developing plans to address these issues.

**Coordinating Agency:** MO Dept. of Economic Development, USDA

**Supporting Partners:** MPUA, MRWA, Regional Planning Commissions, Local Utilities, MDNR

**Action B.b.2.1.2.3.** Systems consolidation according to population, usage, and vulnerability.

**Coordinating Agency:** MDNR, MO Dept. of Economic Development

**Supporting Partners:** MPUA, MRWA, Regional Planning Commissions, Local Utilities, USDA

### **Goal B.b.3. Systems are operational quickly after damage from inundation.**

**Objective B.b.3.1. Maintain situational awareness of all system damage and issues that could result in service interruptions.**

**Strategy B.b.3.1.1.** Monitor WebEOC, media, and perform outreach on these processes.

**Action B.b.3.1.1.2.** Integrate real time GIS layers into the SEMA COP.

**Coordinating Agency:** MDNR and SEMA  
**Supporting Partners:** Local Utilities

**Objective B.b.3.2. Emergency interim measures (temporary fixes) identified with regulatory oversight.**

**Strategy B.b.3.2.1.** Ensure contracting services are identified, streamlined, and utilities are informed.

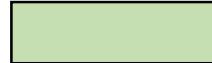
**Action B.b.3.2.1.1.** Leverage resources through MO WARN - Water / Wastewater Agency Response Network (voluntary system).



**Coordinating Agency:** MDNR and SEMA

**Supporting Partners:** MPUA, MRWA, Regional Planning Commissions, Local Utilities

**Action B.b.3.2.1.2.** SEMA develops predetermined emergency mechanism(s) to assist this sector during disasters.



**Coordinating Agency:** SEMA and MDNR

**Supporting Partners:** MPUA, MRWA, Regional Planning Commissions, Local Utilities, MU Extension

**Recovery Issue B.c. Unmitigated infrastructure impacts - damage to stormwater infrastructure in watersheds and contributing tributaries.**

Stormwater infrastructure in Missouri has suffered from under-investment and lack of sufficient maintenance, which is compounded by disaster events. The damage caused by flash flooding and/or prolonged flood inundation threaten public health in multiple ways. This infrastructure extends throughout the entirety of Missouri communities and directly affects homes, safe commutes, and businesses. Outages and inefficiencies of these conveyance features can lead to further flood impacts to adjacent infrastructure, natural resources, and present challenges to local emergency response efforts. Because much of this infrastructure is determined, developed and used on the local level, enhancing the ability of municipalities, counties, and communities to address current damage and reduce the potential for future damage (build resiliency), is pivotal to protecting human health and public assets.

**Goal B.c.1. Reduce infrastructure outages during flooding (and flash flooding) events from inadequate water conveyance infrastructure.**

**Objective B.c.1.1. Increase resiliency of water conveyance structures throughout the watershed.**

**Strategy B.c.1.1.1.** Enable local governments to develop more robust requirements for water conveyance infrastructure. Larger storm event capacity requirements for private infrastructure approved by local and regional governments.

**Action B.c.1.1.1.1.** Utilize the expertise of existing programs to perform community outreach to discuss methods to develop adequate water conveyance and capacity requirements.



**Coordinating Agency:** MDNR and SEMA

**Supporting Partners:** MoDOT, USACE, Regional Planning Commissions, Non-profits

**Objective B.c.1.2. Increase low capacity communities' ability to leverage federal and state funding mechanisms to complete necessary improvements to foster infrastructure resiliency.**

**Strategy B.c.1.2.1.** Technical and permitting assistance provided to low and moderate capacity communities to increase access to Federal cost-share funding mechanisms.

**Action B.c.1.2.1.1.** Expand existing support mechanisms, such as Regional Planning Commissions and/or state agency expertise, to assist lower capacity communities in the project development process.



**Coordinating Agency:** Missouri Legislature and EDA

**Supporting Partners:** Regional Planning Commissions, MoDOT, MDNR, Non-profits, HUD

**Strategy B.c.1.2.2.** Provide state support to communities to assist in infrastructure improvements.

**Action B.c.1.2.1.2.** Utilize general revenue and other funding sources to improve infrastructure across the state, technical, and permitting assistance.



**Coordinating Agency:** Missouri Legislature and EDA

**Supporting Partners:** Regional Planning Commissions, MoDOT, MDNR

## **Recovery Issue B.d. Unmitigated infrastructure impacts - Threats to reliable electric supply and distribution during disasters.**

Public power utilities with vital energy production and transmission infrastructure located within floodplains were impacted, with some suffering prolonged inundation. A lack of electricity due to power utility damage has broad and cascading effects to other infrastructure sectors, agriculture, economic systems, housing, and society. Some of the societal effects may include loss of power to vital health services, keeping businesses operational, or retaining the population base. Protecting essential public utilities and making them resilient so they can continue operations during an event or are back online quickly after a flood, is critical to improving sustainability and reducing risk.

### **Goal B.d. Reduce threats from flooding to electrical supply utilities.**

#### **Objective B.d.1. Evaluate whether temporary flood protection systems construction and removal or permanently constructed systems are more appropriate for utilities.**

**Strategy B.d.1.1.** Evaluate costs of temporary versus permanent flood protection systems at utility generation stations.

**Action B.d.1.1.1.** Gather data to represent the costs of repeatedly transporting, placing, and then removing temporary flood protection systems.



**Coordinating Agency:** PSC and SEMA

**Supporting Partners:** Local Utility, MPUA, MO Electric Cooperative, Ameren Missouri

**Action B.d.1.1.2.:** Investigate and determine costs of design, permitting, construction, and maintenance of permanent flood protection systems.



**Coordinating Agency:** PSC and SEMA

**Supporting Partners:** Local Utility, MPUA, MO Electric Cooperative, Ameren Missouri

#### **Objective B.d.1.2. Reduce or minimize site staffs' access barriers to energy generation stations during high-water events.**

**Strategy B.d.1.2.1.** Investigate opportunities to implement reliable transportation to facilities during extended high-water events.

**Action B.d.1.2.1.1.** Provide guidance on implementation measures to assure adequate safety provisions are in place for boater access during high water events.



**Coordinating Agency:** PSC

**Supporting Partners:** Local Utility, MPUA, MO Electric Cooperative, Ameren Missouri

**Action B.d.1.2.1.2.** Investigate costs of elevating existing access roads or the construction of alternate high-water event access routes to nearest high point.



**Coordinating Agency:** PSC

**Supporting Partners:** Local Utility, MPUA, MO Electric Cooperative, Ameren Missouri

**Goal B.d.2. Better inform the future energy generation site selection process to include secondary costs of operation within a floodplain where facility will be vulnerable to inundation threats.**

**Strategy B.d.2.1.1** Combine information and data across different sectors to gather a complete estimation of the indirect cost of construction and operation in flood prone areas.

**Action B.d.2.1.1.1.** Utilize this information to better inform Stakeholder groups in the review of new facilities.



**Coordinating Agency:** Office of Public Council, MDNR, USACE

**Supporting Partners:** Local utility and local law enforcement, MPUA

**Strategy B.d.2.1.2.** For utility generation facilities that must be constructed in flood zones, incorporate high water resiliency features into the design.

**Action B.d.2.1.2.1.** Within the public's interest assure that new stations have flood resiliency measures incorporated into new designs to assure reliability and safety of the service.



**Coordinating Agency:** Office of Public Council, MDNR,  
USACE

**Supporting Partners:** Local utility and local law enforcement,  
MPUA

## Recovery Issue C: Need for Broader River and Water Management

The 2019 flooding of the Missouri River was record-breaking. The USACE-managed Missouri River flood control systems were overwhelmed by excessive runoff. The National Weather Service reported very wet soil conditions in October 2019 and similar conditions are expected to be repeated during the spring 2020 snowpack melt. Based upon these forecasts, the soil will not be able to absorb the expected runoff and may contribute to higher river levels in the spring.

Fall 2019 water releases were above average, and winter releases continue at high levels on both rivers. Enhanced statewide management and broader interstate management of river systems would address complications and issues of coordination between authorities. Urban expansion in floodplains also continues to impact conveyance and pose risks to people and property. Green infrastructure offers opportunities to mitigate flood impacts.

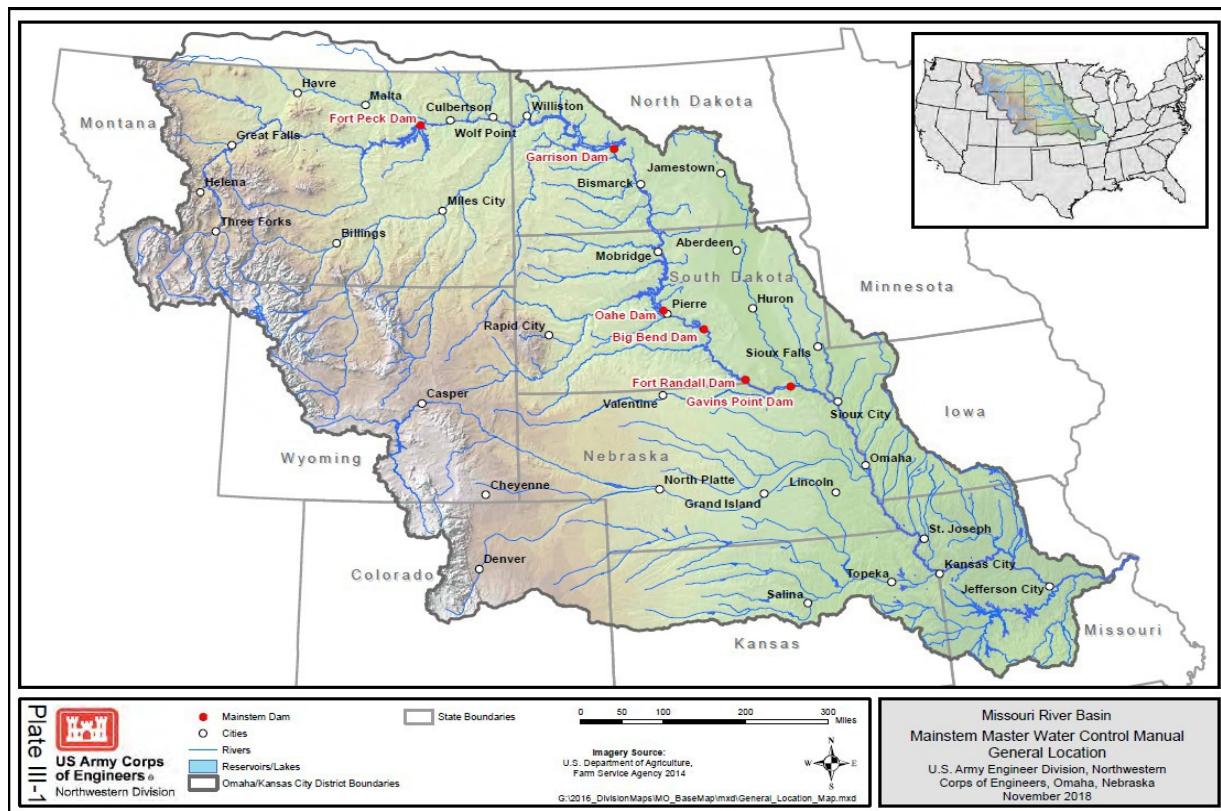


Figure 4: Missouri River Watershed. Source: USACE Missouri River Water Control Manual 2018

## **Goal C.1. Interstate - Increase Missouri's involvement in coordination of river management**

### **Objective C.1.1. Coordinate with interstate entities to identify communication gaps and coordination opportunities.**

**Strategy C.1.1.1.** Identify and involve active entities, organizations, and governments administrating river conveyance.

**Action C.1.1.1.1.** Compile lists of entities identified throughout stakeholder interactions across the regional watershed and engage them in collaborative workspaces such as symposiums, workshops, existing conferences, or newsletters.

Short-term

**Coordinating Agency:** FRAWG

**Supporting Partners:** MDNR, SEMA, MDC, TNC, MU Extension, USACE, East-West Gateway

**Strategy C.1.1.2.** Adopt and support a permanent Missouri advocacy group that represents the wide-ranging state interests in interstate conversations.

**Action C.1.1.2.1.** Research organizations that could manage and support interstate coordination.

**Coordinating Agency:** FRAWG

**Supporting Partners:**

## **Goal C.2. Intrastate - Improve river and flood management coordination within the state.**

### **Objective C.2.1. Coordinate with intrastate entities to identify communication gaps and coordination opportunities to improve flood management.**

**Strategy C.2.1.1.** Regionalize and combine resources to create holistic floodwater management.

**Action C.2.1.1.1.** Identify coordination and government mechanisms within the state that Missouri uses to interact in flood protection systems and water management conversations.

Short-term

**Coordinating Agency:** SEMA and MDNR  
**Supporting Partners:** USACE, TNC

**Action C.2.1.1.2.** Revive the Our Missouri Waters Program (or create similar program) to assist in watershed evaluation, coordinate needs, and resources across sectors.



**Coordinating Agency:** MDNR  
**Supporting Partners:** MDC, USACE, TNC, Non-profits, MU Extension

**Action C.2.1.1.3.** Identify interconnecting stakeholder interests and responsibilities.



**Coordinating Agency:** SEMA, MDNR, USACE  
**Supporting Partners:** MDC, TNC, non-profits, MU Extension

**Objective C.2.2.** Coordinate with railroads for improved communication and understanding of procedural items across the state. Reduce resolution of issues through litigation process.

**Strategy C.2.2.1.** Outreach to railroads to discuss emergency measures, regular maintenance, and railway improvements.

**Action C.2.2.1.1.** Develop agreement on coordination between various Federal, State, and local governments with the railroads operating within State.



**Coordinating Agency:** SEMA, MODOT, MRRA  
**Supporting Partners:** Regional Planning Commissions, Federal DOT

**Goal C.3. Floodwaters have catchment areas and attenuating space for excessive floodwater while also reducing localized floodwater contributions.**

**Objective C.3.1. Protect, enhance, and increase naturally functioning systems and flood storage capacities.**

**Strategy C.3.1.1.** Establish easements, green infrastructure, buyouts, mitigations acres, recreation areas.

**Action C.3.1.1.1.** Utilize existing data, tools, and studies to identify priority areas for floodplain protection, enhancement, re-establishment.



**Coordinating Agency:** DPS, SEMA, MDC

**Supporting Partners:** TNC, USACE, MDNR

**Strategy C.3.1.2.** Complete and expand floodplain protection, enhancement and re-establishments through existing programs.

**Action C.3.1.2.1.** Identify points in constricted floodplain areas where levee setbacks can reduce strain across multiple flood protection systems.



**Coordinating Agency:** USACE, MDC, USDA

**Supporting Partners:** TNC

**Action C.3.1.2.2.** Investigate and implement buyouts of repetitive damage structures in the floodplain.



**Coordinating Agency:** SEMA and FEMA

**Supporting Partners:** Local Municipalities

**Strategy C.3.1.3.** Protect existing natural spaces.

**Action C.3.1.3.1.** Secure natural floodplains through expansion of protective measures such as conservation areas, conservation easements, park creation, etc.  
**(This strategy benefits and crosscuts infrastructure and the natural and cultural resources RSF)**



**Coordinating Agency:** MDC

**Supporting Partners:** USACE, USFWS, NPS

**Objective C.3.2. Reduce further loss of floodplains by adopting more restrictive requirements for allowable rises in flood zones, to minimize the growing stresses on flood protection systems and vital infrastructure.**

**Strategy C.3.2.1.** Complete comprehensive state-wide evaluation of the cost of lost floodplain services and functions to better understand the economic value of the floodplains for the Governor's Office.

**Action C.3.2.1.1.** Analyze cost data of repetitive private and public damage within flood zones, evaluate expanding flood zones in relation to floodplain development, NFIP rates for citizens and businesses.

Intermediate

**Coordinating Agency:** SEMA and EDA

**Supporting Partners:** TNC and FEMA

**Action C.3.2.1.2.** Create working group to support and facilitate regional conversations regarding floodplain interactions. Utilize and develop predictive inundation mapping simulating shifting floodwaters with floodplain development.

**Coordinating Agency:** SEMA and MDNR

**Supporting Partners:** TNC

**Objective C.3.3. Reduce storm water runoff and expansion of impervious surfaces without mitigating measures.**

**Strategy C.3.3.1.** Expand the benefits of stormwater management program features to growing communities earlier in development phase (between 10-year census intervals requiring participation) before major problems emerge.

**Action C.3.3.1.1.** Complete intermediate evaluations of land disturbance permit to identify areas with high rates of developing between the 10-year intervals.

**Coordinating Agency:** MDNR

**Supporting Partners:** Regional Planning Commissions

**Action C.3.3.1.2.** Strategically target technical assistance efforts to developing communities to discuss voluntary measures which they can adopt (outside of the MS4 Program formal requirements) that will decrease impervious surface impacts as they grow.



**Coordinating Agency:** MDNR

**Supporting Partners:** Regional Planning Commissions

**Strategy C.3.3.2.** Promote development of robust (technically and financially) stormwater management programs within regulated communities to achieve greatest benefit of stormwater protection measures.

**Action C.3.3.2.1.** Provide guidance to communities on the development of stable funding mechanisms to support stormwater management program measures.

**Short-term**

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**Coordinating Agency:** EPA and MDNR

**Supporting Partners:** TNC, Non-profits

**Action C.3.3.2.2.** Expand FAC office's capabilities in regard to knowledge of MS4 Program and participants needs.



**Coordinating Agency:** MDNR

**Supporting Partners:** EPA

**Action C.3.3.2.3.** Foster and encourage collaboration across communities on strategies for successful stormwater management programs through workshops and other forums.



**Coordinating Agency:** SEMA and MDNR

**Supporting Partners:** Regional Planning Commissions, USACE Silver Jackets, MU Extension, Non-profits

**Goal C.4. Missouri citizens better understand water conveyance and the interactions between humans and the landscape.**

**Objective C.4.1. Broaden citizen exposure to information and education regarding the importance and interconnectedness of the rivers, floodplains and watersheds.**

**Strategy C.4.1.1.** Develop and utilize outreach education, PSAs, and curricula to inform all citizens about river functions.

**Action C.4.1.1.1.** Identify and involve champions for education.



**Coordinating Agency:** MDC, MDNR, SEMA

**Supporting Partners:** TNC, Non-profits

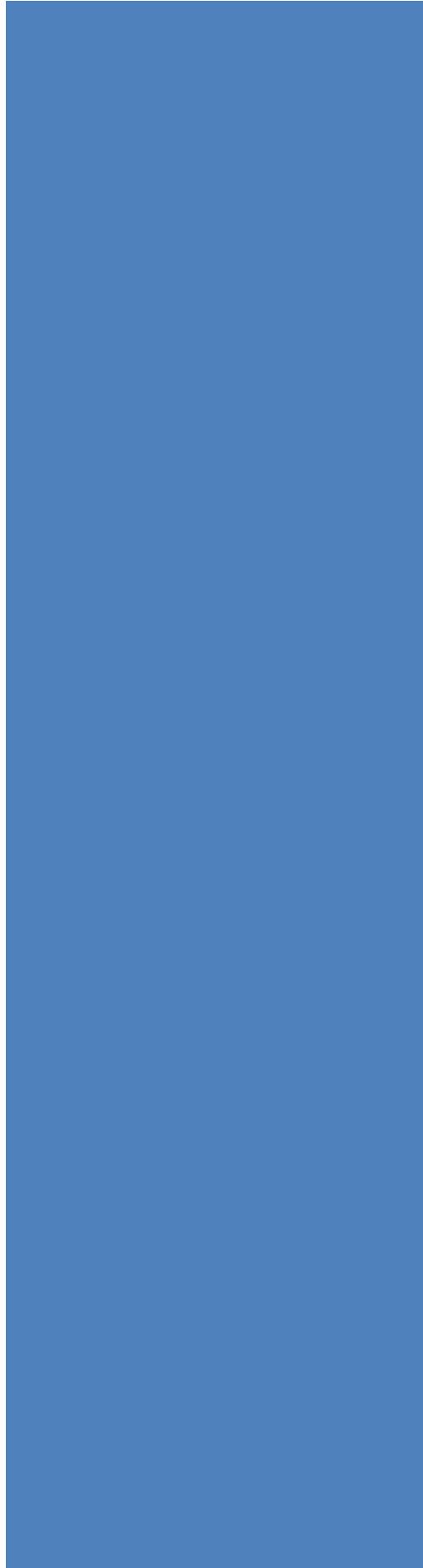
**Action C.4.1.1.2.** Conduct outreach to citizens through various mediums such as: social media, workshops, newsletters, etc.



**Coordinating Agency:** MDC, MDNR, SEMA

**Supporting Partners:** TNC, MU Extension Office, USACE Silver Jackets, Non-profits

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## **Natural and Cultural Resources Recovery**

The mission of the federal Natural and Cultural Resources (NCR) Recovery Support Function (RSF), as stated in the National Disaster Recovery Framework (NDRF), is to “integrate federal assets and capabilities to help State and Tribal governments and communities address long-term environmental and cultural resource recovery needs after large-scale and catastrophic incidents.” Similarly, Missouri has adopted the Missouri Disaster Recovery Framework (MDRF) that mirrors the NDRF, and in sync with its tenets, appointed a State NCR RSF coordinator. The mission of the State NCR RSF is to coordinate and integrate the capabilities of state, local, private sector and nonprofit partners for recovery of natural, cultural and historic sites and interests. The lead agency coordinating recovery efforts for the NCR RSF is the Missouri Department of Natural Resources (DNR).

Jointly, the State and Federal NCR RSFs established a team to facilitate the integration of the capabilities of all partners to support the protection of natural and cultural resources and historic properties in the state of Missouri. This effort is accomplished through appropriate response and recovery actions to preserve, conserve, rehabilitate, and restore these resources consistent with post-disaster community priorities.

A variety of methods WAS used to identify and capture NCR issues. Conversations and information sessions were conducted with Missouri program leads and directors including Missouri Department of Natural Resources, Missouri Department of Conservation; Federal agencies, i.e.

<b>Natural and Cultural Resources Partners</b>	
<b>Coordinating Agency</b>	
U.S. Department of the Interior (DOI)	
<b>Primary Agencies</b>	
U.S. Department of Homeland Security – Federal Emergency Management Agency (FEMA)	
U.S. Department of the Interior (DOI)	
U.S. Environmental Protection Agency (EPA)	
<b>Supporting Agencies</b>	
U.S. Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS)	
U.S. Army Corps of Engineers	
U.S. Forest Service	
U.S. Fish and Wildlife Service	
National Park Service	
Missouri Department of Natural Resources	
Missouri Department of Conservation	
Missouri Department of Historic Preservation	
Missouri State Library	
University of Missouri	

FEMA, the U.S. Army Corps of Engineers (USACE), U.S. Geological Survey (USGS), U.S. Fish and Wildlife Service (FWS), the National Park Service (NPS), and U.S. Forest Service (FS). Anecdotal and qualitative data was received from local news outlets, community members, and FEMA external affairs personnel.

## **Recovery Issue A: Lack of resiliency in watershed floodplains**

Building resiliency and naturally reducing future flooding requires collaborative integration and expertise of federal, state and non-government partners to determine the most efficient and effective opportunities for environmental/nature-based flood attenuation and resiliency. It also requires full use of technologies and modeling software, and communication, coordination and education of stakeholders. This recovery issue crosscuts with the infrastructure and agriculture recovery support function areas.

### **Goal A.1: Build resiliency and naturally reduce future flooding**

**Objective:** Integrate the expertise of federal, state and non-government partners to determine the most efficient and effective opportunities for environmental/nature-based flood attenuation and resiliency. Achievement of this goal and objective will also benefit agriculture, infrastructure, and economics. Building resiliency that aids in naturally reducing flooding can help tourist areas remain viable, impacts upon arable farmlands can be reduced thus helping them remain productive.

**Strategy A.1.1.1.** See strategy outlined in FRAWG.

**Action A.1.1.1.1.** Implement the environmental/nature-based solution recommendations prescribed in the FRAWG.

**Long-term**

**Coordinating Agency:** DNR/ MDA and other FRAWG agencies  
Promote and assist where applicable

**Supporting Partner:** DNR/ MDA and other FRAWG agencies -  
Promote and assist where applicable

**Strategy A.1.1.2.** Define the problem: Use software tools, such as The Nature Conservancy FPTool to integrate floodplain modeling and data sets to create a baseline for damage, identify best environmental/nature-based flood attenuation and resiliency, and return on investments opportunities.

**Action A.1.1.2.1.** Assist floodplain managers and stakeholders in using flood plain management and planning tools, to identify best opportunities for recovery and build resilience and return on investments.

**Intermediate**

**Coordinating Agency:** DNR and Dept. of Agriculture promote and assist where applicable  
**Supporting Partner:** USACE, TNC

**Action A.1.1.2.2** Develop a Missouri version of the TNC FPTool, like the FPTool developed for the Lower Meramec; include environmental, economic and social parameters.

**Intermediate**

**Coordinating Agency:** SEMA /DNR /MDA  
**Supporting Partner:** TNC, USACE, USGS

**Action A.1.1.2.3.** Review projects that did not qualify for Public Assistance and research alternate funding. (FEMA action)

**Short-term**

**Coordinating Agency:** SEMA, DNR, MDC  
**Supporting Partner:** FEMA, Partners directly involved with projects

**Strategy A.1.1.3.** Improve communication, coordination and education of stakeholders in the area of floodplain resiliency and RSF 6: Natural and Cultural Resources efforts to return property to pre-existing use.

**Action A.1.1.3.1.** Identify communities, planners, and other recovery partners in target floodplains. This will be initiated in a short-term time frame with anticipated continuance into the long-term.

**Long-term**

**Coordinating Agency:** MDA/ DNR  
**Supporting Partner:** DNR, MDC, USGS, and all other relevant partner agencies where applicable

**Action A.1.1.3.2.** Conduct outreach to watershed/floodplain stakeholders/partners (need to ID roles, who will do it). Include Nature-Based Solutions in outreach. See Naturally Resilient Communities website for information on Nature Based Solutions: [www.nrcsolutions.org](http://www.nrcsolutions.org). This will be initiated in a short-term timeframe with anticipated continuance into the long-term.

**Long-term**

**Coordinating Agency:** MDA/ DNR  
**Supporting Partner:** MDC, USGS, and all other relevant partner agencies where applicable

**Action A.1.1.3.3.** Expand training for Certified Floodplain Managers. Include Nature-Based Solutions in Training, Flood Masters (USACE)

**Intermediate**

**Coordinating Agency:** SEMA, USACE

**Supporting Partner:** DNR, MDC, USGS, and all other relevant partner agencies where applicable

**Action A.1.1.3.4.** Evaluate the creation of a central information clearing house. This will be initiated in a short-term timeframe and is anticipated to continue into the intermediate term.

**Intermediate**

**Coordinating Agency:** SEMA

**Supporting Partner:** DNR, MDC, USGS, and all other relevant partner agencies where applicable

**Strategy A.1.1.4.** Support multi-jurisdiction watershed-floodplain level planning to improve coordinated recovery efforts and build resilience.

**Action A.1.1.4.1.** Multi-jurisdiction collaboration by Regional Planning Commissions at the local level.

**Intermediate**

**Coordinating Agency:** SEMA

**Supporting Partner:** MACOG, USACE, TNC, DNR

**Action A.1.1.4.2.** Encourage inter-state floodplain planning utilizing necessary multiple departments and jurisdictions.

**Long-term**

**Coordinating Agency:** SEMA, USACE

**Supporting Partner:** DNR, MDC, MACOG (RPC, and associated), USGS, and all other relevant partner agencies where applicable

## **Objective A.1.2. Improve predictive flood capabilities to reduce flood damage**

**Strategy A.1.2.1.** Expand and integrate available technologies to identify natural resources at risk of long-term damage and loss from flooding.

**Action A.1.2.1.1** Improve decision making by de-conflicting data developed

through various methodologies and developing a set of common tools.

**Intermediate**

**Coordinating Agency:** SEMA, USGS  
**Supporting Partner:** USACE

**Action A.1.2.1.2.** Expand USGS stream gauge program and integrate with other data collection, predictive models, and communication and response programs. This will be initiated in the intermediate timeframe with anticipation to be continued as a long-term action.

**Long-term**

**Coordinating Agency:** SEMA, USGS  
**Supporting Partner:** USACE

**Objective A.1.3. Employ nature-based solutions and design flood corridors with riparian areas that naturally attenuate floodwaters.**

**Strategy A.1.3.1.** Nature-based flood corridor designs, which include wetlands and riparian areas that will reduce future floods, enhance water filtration, and improve ecosystems.

**Action A.1.3.1.1.** Apply programs and strategies such as used at Lower Meramec, Big Muddy and Mark Twain Lake.

**Intermediate**

**Coordinating Agency:** USACE  
**Supporting Partner:** MDC, USFWS, MACOG, DNR, TNC

**Recovery Issue B: Nutrient and contaminant runoff, invasive species, erosion, and sediment migration.**

Waterways are the key vectors for nutrient and contaminant runoff, erosion, sediment migration and the spread of invasive species. The introduction of these vectors downstream disrupts the balance of established ecosystems, devastates wildlife habitats, and reduces wetlands and arable farmland. Early removal or containment of these vectors is the most cost-effective remediation. This issue crosscuts with both agriculture and infrastructure. Nutrient and contaminant runoff, and erosion can cause loss of arable land, thus impacting agricultural stability and revenue.

**Goal B.1. Reduce nutrient and contaminate runoff, invasive species, erosion, and sediment migration to improve arable farmland, ecosystems and habitats.**

**Objective B.1.1. Expand wetlands and habitats by repurposing lands to attenuate floods and reduce impact to arable farmland.**

**Strategy B.1.1.1.** Support land use policies and programs to repurpose land to attenuate floods.

**Action B.1.1.1.1.** Expand the NRCS Ag-wetlands and other land buyout/repurposing programs.

**Long-term**

**Coordinating Agency:** NRCS

**Supporting Partner:** MDC, FWS

**Objective B.1.2. Use nature-based solutions to stabilize eroding streams to reduce erosion, excessive sediment nutrient runoff and loss of land**

**Strategy B.1.2.1.** Use bioengineering approaches for stream restoration to reduce erosion, nutrient runoff and improve habitat port land use policies and programs to repurpose land to attenuate floods.

**Action B.1.2.1.1.** Develop a River Restoration Toolbox to guide state and federal stream management projects similar to Iowa's program.

**Long-term**

**Coordinating Agency:** NRCS

**Supporting Partner:** DNR, MDC, NRCS, USFS, USFWS, USACE, TNC

**Action B.1.2.1.2.** Expand NRCS funding in Missouri for bioengineering and geotechnical stream restoration.

**Intermediate**

**Coordinating Agency:** NRCS

**Supporting Partner:** DNR

**Objective B.1.3. Reduce the re-colonization of invasive species displaced downstream by floods**

**Strategy B.1.3.1.** Determine extent of invasive species distribution and eliminate from inundation area.

**Action B.1.3.1.1.** Survey inundations areas in targeted watersheds for the presence of invasive species particularly those that will impede watershed recovery.

**Intermediate**

**Coordinating Agency:** MDC

**Supporting Partner:** USFWS

**Strategy B.1.3.2.** Work with MO/Dept of Conservation, NRCS, DNR, FWS and community partners to remove invasive species

**Action B.1.3.2.1.** Promote best practices on preventing noxious weed and invasive species spread.

**Intermediate**

**Coordinating Agency:** MDC

**Supporting Partner:** USFWS

**Recovery Issue: State, City and municipal parks and recreational areas have been damaged by floods impacting quality of life, sense of community and tourism.**

Restoring and enhancing Missouri's recreational and sporting opportunities, natural landscapes, and cultural landmarks improves the quality of life for communities and supports Missouri as a top tourist destination. Efforts directed to address this recovery issue will benefit NCR, economics (especially the area of tourism), and community planning and capacity building.

**Goal C.1. Restore and enhance Missouri's recreational and sporting opportunities, natural landscapes, cultural landmarks to improve tourism and the quality of life for communities.**

**Objective C.1.1. Restore Missouri's recreational and sporting opportunities, natural landscapes, cultural landmarks to improve tourism and the quality of life for communities.**

**Strategy C.1.1.1.** Develop visions for restoration and improvement of municipal and city recreation and outdoor sporting areas.

**Action C.1.1.1.1.** Identify damaged state, municipal, and city parks, natural landscapes and cultural landmarks, recreation and outdoor sporting areas.

**Action C.1.1.1.2.** Identify funding for parks, landmarks, recreation and outdoor sporting areas and facilities not provided in Public Assistance. Identify funding assistance opportunities and provide.

**Intermediate**

**Coordinating Agency:** DNR- State Parks

**Supporting Partner:** FEMA, MDC, NPS, USACE, and all other relevant partner agencies where applicable

**Strategy C.1.1.2.** Repair state and municipal boating marinas/access areas.

**Action C.1.1.2.1.** N/A

**Intermediate**

**Coordinating Agency:** SEMA, MDC, DNR, USACE

**Supporting Partner:** local community marinas

## **Goal C.2. Relieve restricted fish passage - fluvial designs that are failing or inefficient due to disaster impacts.**

**Objective C.2.1. Reconnect stream habitat for fish and other wildlife while protecting road infrastructure from future washout and damage from floods.**

**Strategy C.2.1.1.** Replace failing road, stream, and low-water crossings with flood and fish passing structures.

**Action C.2.1.1.1.** Identify road crossings that are both barriers to fish and wildlife passage and are infrastructure concerns or are in repetitive loss locations.

**Short-term**

**Coordinating Agency:** SEMA,

USFWS, MDC, MODOT, USACE

**Supporting Partner:** DNR, USACE  
and local volunteers

**Action C.2.1.1.2.** Develop engineering designs for identified locations prior to disasters to avoid replacing damaged infrastructure with substandard structures.

**Intermediate**

**Coordinating Agency:** SEMA,

MODOT, USFWS, MDC

**Supporting Partner:** DNR, USACE

and local volunteers

**Strategy C.2.1.2.** Restore damaged wetland habitat from silt and freshwater inundation resulting from flood disasters.

**Action C.2.1.2.1.** Assess damaged wetland habitat and habitat loss from flooding events and develop potential restoration plans to restore wetlands.

**Intermediate**

**Coordinating Agency:** FWS, NRCS

**Supporting Partner:** DNR and local volunteers

**Action C.2.1.2.2. Develop plans for restoration of wetlands**

**Action C.2.1.2.3.** Identify available funding to restore wetland habitat.

**Intermediate**

**Coordinating Agency:** FWS, NRCS

**Supporting Partner:** DNR and local volunteers

## **Recovery Issue D: Damage to historical and cultural resources**

There remains potential for significant damage and adverse effects to Missouri's plethora of historic sites and archaeological artifacts and locations. Action is needed to identify damage, digitize data, and share information with stakeholders for a comprehensive recovery.

### **Goal D.1. Build state capacity to assess disaster impacts.**

#### **Objective D.1.1. Develop or utilize existing historic and cultural resource inventories**

**Strategy D.1.1.1.** Develop plan for damage assessments and data gathering.

**Action D.1.1.1.1.** Share impact data from county to statewide agencies for united insight on recovery needs.

**Short-term**

**Coordinating Agency:** MOSHPO

**Supporting Partner:** HENTF, NPS, DNR

**Action D.1.1.1.2.** Work with state and local institutions to identify damage and agency needs.

**Short-term**

**Coordinating Agency:** MOSHPO

**Supporting Partner:** HENTF, NPS, DNR

## **Recovery Issue E: Low response capacity of cultural institutions to prepare for and respond to disasters.**

Given the nature of state agencies operations, there lacks reporting mechanisms for immediate and long-term recovery in the wake of disaster events. Damage to collections, archives, sites, and other cultural items can be exacerbated by response time.

**Goal E.1. Build capacity to ensure that cultural institutions and organizations can address emergencies and disasters.**

**Objective E.1.1. Deliver preservation education and training on disaster preparedness, emergency response, and collection salvage to cultural institutions and historic properties. Provide "one-stop shop" for preparedness education and training**

**Strategy E.1.1.1. Leverage existing training programs in disaster planning.**

**Action E.1.1.1.1:** Develop Cultural and Historic task force to provide information and education for local stewards.

**Short-term**

**Coordinating Agency:** MOSHPO, DNR

**Supporting Partner:** HENTIF, FEMA

**Strategy E.1.1.2:** Develop institutional response plans. Address the need for updated hazard plans. Promote emergency preparedness and mitigation strategies.

**Action E.1.1.2.1** Provide material. Encourage that the plans are exercised and practiced.

**Intermediate**

**Coordinating Agency:** MOSHPO, DNR  
**Supporting Partner:** HENTIF, FEMA

**Strategy E.1.1.3.** Establish disaster communications among local cultural stewards and their local first responders and emergency managers.

**Action E.1.1.3.1.** Identify the current condition of state communications in terms of response and data sharing.

**Short-term**

**Coordinating Agency:** MOSHPO, DNR  
**Supporting Partner:** HENTIF, FEMA

**Strategy E.1.1.4.** Familiarize cultural stewards and emergency managers with immediate salvage procedures to prevent loss of valuable cultural resources such as books, documents, photographs, artwork, and objects.

**Action E.1.1.4.1.** Provide workshops and information sessions at local level. Get community involved.

**Short-term**

**Coordinating Agency:** MOSHPO, DNR  
**Supporting Partner:** HENTIF, FEMA

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## Annex: Recovery Support Strategy Matrix

